

MINOLTA

EP-3050

MODEL

SERVICE MANUAL

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1 SERVICE INSTRUCTIONS

1-1. PRECAUTIONS FOR DISASSEMBLY/ADJUSTMENTS

Observe the following precautions whenever servicing the copier.

- Be sure to unplug the copier from the outlet before attempting to service the copier.
- The basic rule is not to operate the copier anytime during disassembly.
If it is absolutely necessary to run the copier with its covers removed, use care not to allow your clothing to be caught in revolving parts such as the Timing Belt and gears.
- Be sure to use the Interlock Switch Actuating Jig whenever it is necessary to actuate the Interlock Switch with the covers left open or removed.
- Do not plug in or unplug print jacks on the Board or connect or disconnect the Board connectors while power is being supplied to the copier.
- Do not use flammable spray around the copier in operation.
- The Magnet Roller of the Imaging Unit generates strong magnetic force. Do not bring it near a cathode-ray tube or watch.
- A used lithium cell should be disposed of according to the local regulations and never be discarded casually or left unattended at the user's premises.
- Do not use an air gun or vacuum cleaner for cleaning the ATDC Sensor and other sensors, as they can cause electrostatic destruction. Use a blower brush and cloth. If a unit containing these sensors is to be cleaned, first remove the sensors from the unit.
- When handling the PWBs with MOS ICs, observe "1-2. Instructions for Handling the PWBs with MOS ICs."
- When handling the PC Drum, observe precautions given in "1-3. Handling of the PC Drum."
- Note that replacement of a PWB may call for readjustments or resetting of particular items.
- Use the right screw in the right place at reassembly. Note that some are longer and some are thicker than others.
- A toothed washer is used with the screw that secures the ground wire to ensure positive conduction. Do not forget to insert this washer at reassembly.
- To reassemble the copier, reverse the order of disassembly unless otherwise specified.
- If it becomes necessary to replace the thermal fuse or any other fuse mounted on a board, be sure to use one of the rating marked on the blown fuse. Always note the rating marked on the fuse, as the rating and mounting site or number used are subject to change without notice.
- Do not pull out the Toner Hopper while the Toner Bottle is turning, as a damaged Toner Replenishing Motor or locking mechanism could result. If the copier is to be run with the Front Door swung down, make sure that the Toner Hopper is in the locked position.

CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER. DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

ADVARSEL: Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

1-2. INSTRUCTIONS FOR HANDLING THE PWBs WITH MOS ICs

The following precautions must be observed when handling P.W. Boards with MOS (Metal Oxide Semiconductor) ICs.

During Transportation/Storage:

- During transportation or when in storage, new P.W. Boards must not be indiscriminately removed from their protective conductive bags.
- Do not store or place P.W. Boards in a location exposed to direct sunlight.
- When it becomes absolutely necessary to remove a Board from its conductive bag or case, always place it on its conductive mat in an area as free as possible from static electricity.
- Do not touch the pins of the ICs with your bare hands.

During Replacement:

- Before unplugging connectors from the P.W. Boards, make sure that the power cord has been unplugged from the outlet.
- When removing a Board from its conductive bag or conductive case, do not touch the pins of the ICs or the printed pattern. Place it in position by holding only the edges of the Board.
- Before plugging connectors into the Board, make sure that the power cord has been unplugged from the power outlet.

During Inspection:

- Avoid checking the IC directly with a multimeter; use connectors on the Board.
- Never create a closed circuit across IC pins with a metal tool.
- When it is absolutely necessary to touch the ICs and other electrical components on the Board, be sure to ground your body.

1-3. HANDLING OF THE PC DRUM

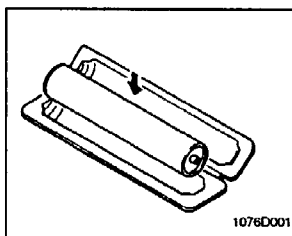
During Transportation/Storage:

- Use the specified carton whenever moving or storing the PC Drum.
- The storage temperature is in the range between -20°C and 40°C .
- In summer, avoid leaving the PC Drum in a car for a long time.

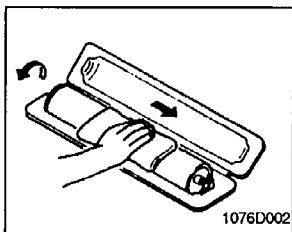
Handling:

- Ensure that the correct PC Drum is used.
- Whenever the PC Drum has been removed from the copier, store it in its Container or protect it with a Drum Cloth.
- The PC Drum exhibits greatest light fatigue after being exposed to strong light over an extended period of time. Never, therefore, expose it to direct sunlight.
- Use care not to contaminate the surface of the PC Drum with oilbase solvent, fingerprints, and other foreign matter.
- Do not scratch the surface of the PC Drum.
- Do not apply chemicals to the surface of the PC Drum.
- Do not attempt to wipe clean the surface of the PC Drum unless its surface is contaminated with fingerprints.

If the surface is contaminated with fingerprints, clean it using the following procedure.

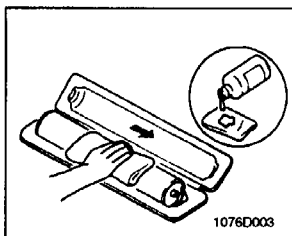


1. Place the PC Drum into one half its container.



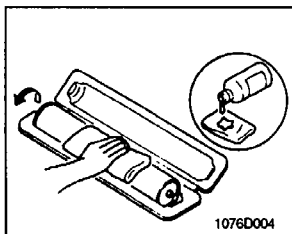
2. Gently wipe the residual toner off the surface of the PC Drum with a dry, dust-free cotton pad.
 - a) Rotate the PC Drum so that the area of its surface on which the line of toner left by the Cleaning Blade is present is facing straight up. Wipe the surface in one continuous movement from the rear edge of the PC Drum to the front edge and off the surface of the PC Drum.
 - b) Rotate the PC Drum slightly and wipe the newly exposed surface area with a clean face of the dust-free cotton pad. Repeat this procedure until the entire surface of the PC Drum has been thoroughly cleaned.

* Always use a clean face of the dry dust-free cotton pad until no toner is evident on the face of the pad after wiping.



3. Soak a small amount of either ethyl alcohol or isopropyl alcohol into a clean, unused dust-free cotton pad which is folded over into quarters. Now, wipe the surface of the PC Drum in one continuous movement from its rear edge to its front edge and off its surface one to two times.

* Never move the pad back and forth.



4. Using the same face of the pad, repeat the procedure explained in the latter half of step 3 until the entire surface of the PC Drum is wiped. Always overlap the areas when wiping. Two complete turns of the PC Drum would be appropriate for cleaning.

NOTES

- The Organic Photoconductor Drum is softer than CdS and Selenium Drums and is therefore susceptible to scratches.
- Even when the PC Drum is only locally dirtied, wipe the entire surface.
- Do not expose the PC Drum to direct sunlight. Clean it as quickly as possible even under interior illumination.
- If dirt remains after cleaning, repeat the entire procedure from the beginning one more time.

1-4. PARTS WHICH MUST NOT BE TOUCHED

(1) Red Painted Screws

Purpose of Application of Red Paint

Red painted screws indicate an assembly or unit can only be adjusted or set at the factory and shall not be readjusted, set, or removed in the field. Note that when two or more screws are used on the part in question, only one representative screw may be marked with red paint.

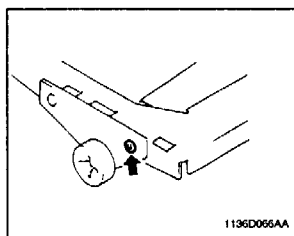
(2) Variable Resistors on Board

Do not turn the variable resistors (potentiometers) on boards to which no adjusting instructions are given in "ADJUSTMENT".

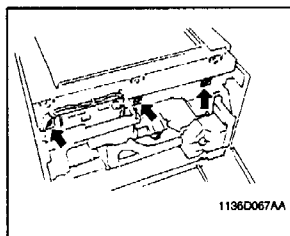
(3) Other Screws

Although not marked with red paint, the following screws must not be loosened or readjusted.

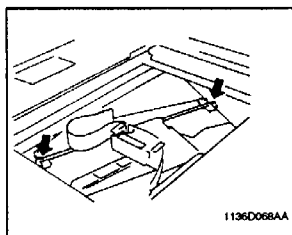
One screw on the Scanner
Roller Height Adjusting Plate



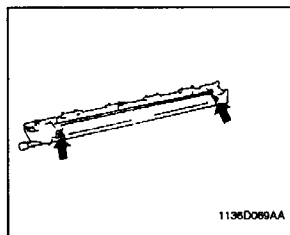
Three screws on Scanner Rail



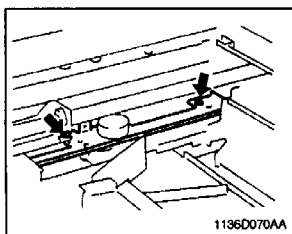
Two screws on the Lens Rail



Two screws on the Lower
Pre-Image Transfer Guide Plate

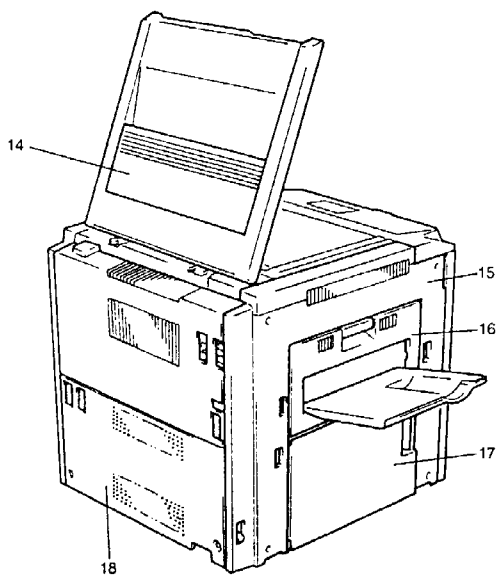
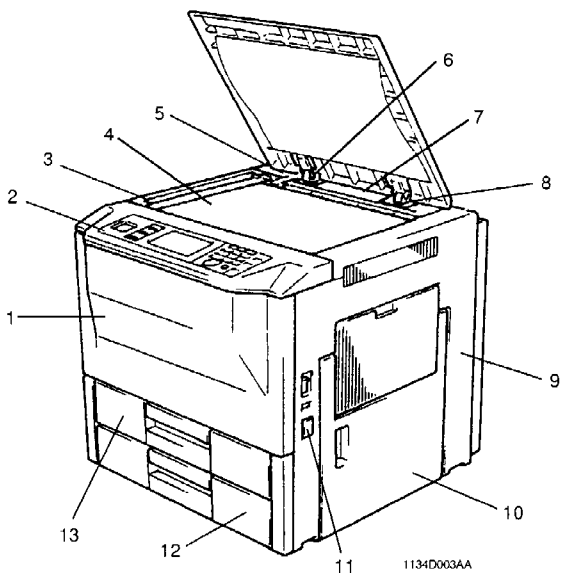


Two screws on the Mirror Motor
Unit



2 DISASSEMBLY/REASSEMBLY

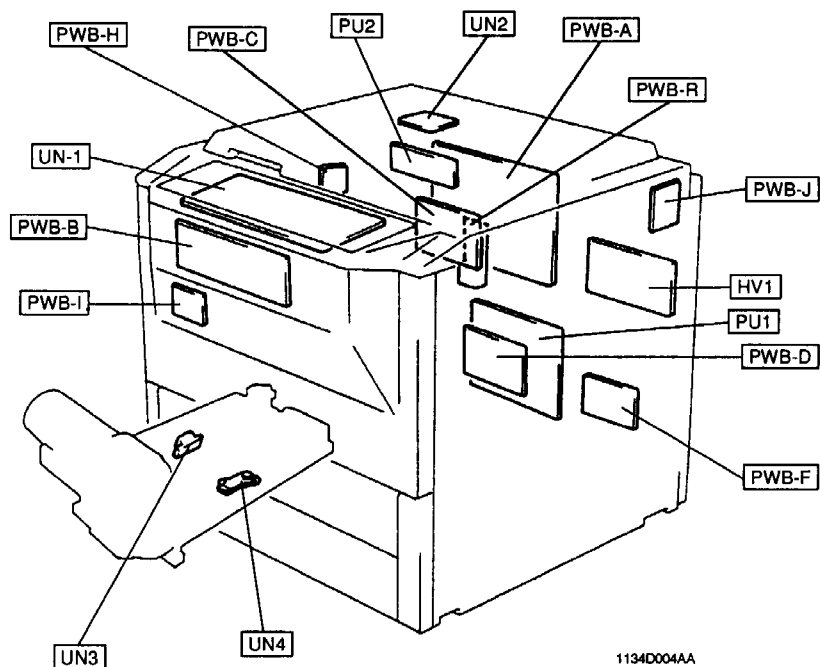
2-1. DOORS, COVERS, AND EXTERIOR PARTS: IDENTIFICATION AND REMOVAL PROCEDURES



No.	Part Name	Removal Procedure
1	Front Door	Swing down the Front Door. ➡ Remove two Front Door hinge shafts. ➡ Remove one belt mounting screw inside the Front Door.
2	Control Panel	Raise the Original Cover. ➡ Swing down the Front Door. ➡ Remove the Right Door (Manual Bypass Unit). ➡ Remove the Right Cover. ➡ Open the Left Door (Exit/Duplex Switching Unit). ➡ Remove the Upper Left Cover. ➡ Remove four control panel mounting screws. ➡ Unplug three connectors from PWB-B.
3	Original Width Scale	Raise the Original Cover. ➡ Remove two scale mounting screws. Note: When the Original Width Scale has been removed, use care not to lose two springs.
4	Original Glass	
5	Rear Upper Cover (small)	Remove the Original Cover. ➡ Remove the screw cover and one Rear Upper Cover (small) mounting screw.
6	Left Hinge Cover	Remove the Original Cover. ➡ Remove one Left Hinge Cover mounting screw.
7	Rear Upper Cover	Remove the Original Cover. ➡ Remove the Right and Left Hinge Covers. ➡ Remove the Rear Upper Cover (small). ➡ Remove the Right Door. ➡ Remove the Right Cover. ➡ Remove one Rear Upper Cover mounting screw.
8	Right Hinge Cover	Remove the Original Cover. ➡ Remove one Right Hinge Cover mounting screw.
9	Right Cover	Remove the Right Door. ➡ Remove four Right Cover mounting screws.
10	Right Door (Manual Bypass Unit)	Open the Right Door. ➡ Remove the harness from one wiring saddle. ➡ Unplug three connectors. ➡ Remove two Right Door mounting screws.
11	Counter Cover	Snap off the Counter Cover. (It is secured by catches at two places.)
12	2nd Drawer	Slide out the drawer and remove one stopper mounting screw on the right.
13	1st Drawer	
14	Original Cover	Pull the Original Cover straight up.
15	Upper Left Cover	Open the Left Door. ➡ Remove six Upper Left Cover mounting screws.
16	Left Door (Exit/Duplex Switching Unit)	See p. D-67.
17	Middle Left Cover	Remove the Upper Left Cover. ➡ Remove two Middle Left Cover mounting screws.
18	Rear Cover	Remove six Rear Cover mounting screws.

2-2. REMOVAL OF CIRCUIT BOARDS

- When removing circuit board, refer to "PRECAUTIONS FOR HANDLING THE PWBs" contained in SWITCHES ON PWBs and follow the corresponding removal procedures given on the next page.
- Replacement of a circuit board may call for readjustments or resetting of particular items.
- The removal procedures given on the next page omit the removal of connectors and screws securing the circuit-board support or circuit board.
- Where it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.



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◆Readjustments/Resetting Involved in Replacement of PWB-R, UN2, UN3, and UN4

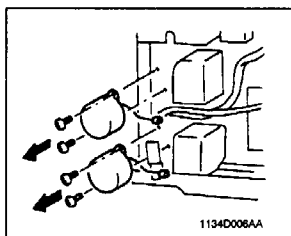
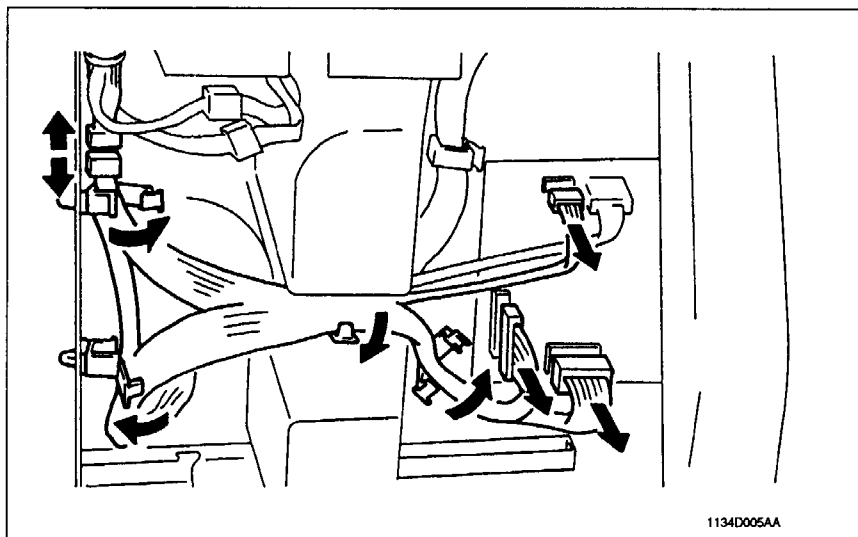
- When PWB-R (RAM Board) is replaced:
Carry out Memory Clear and then make the Tech. Rep. Choice, User's Choice, and Adjust settings again.
- When UN2 is replaced:
Make the initial adjustment of the Original Size Detecting Board. (See p. D-??.)
- When UN3 is replaced:
Adjust the exposure level in the Auto Exposure mode. (See p. D-??.)
- When UN4 is replaced:
Discard the developer which had been used until UN4 was replaced, charge the Developing Unit with fresh starter, and adjust ATDC. (See p. D-??.)

Symbol	Name	Removal Procedure
PWB-A	Master Board	Remove the Rear Cover. ➡ Remove PWB-A.
PWB-B	MSC Board	Swing down the Front Door. ➡ Remove the Circuit Board Cover. ➡ Remove PWB-B.
PWB-C	Power Supply Board	Remove the Rear Cover. ➡ Remove PWB-A Mounting Bracket Assy. ➡ Remove PWB-C.
PWB-D	Noise Filter Board	Remove the Rear Cover. ➡ Remove the PWB-A Mounting Bracket Assy. ➡ Remove the Power Supply Unit Cover. ➡ Remove the DC Power Supply Unit. ➡ Remove PWB-D.
PWB-H	AE Sensor Board	Remove the Original Width Scale. ➡ Remove the Original Glass. ➡ Remove PWB-H.
PWB-I	Tech. Rep. Setting Switches Board	Swing down the Front Door. ➡ Remove the Circuit Board Cover. ➡ Remove PWB-I.
PWB-J	SCP Board	Remove the Right Cover. ➡ Remove PWB-J.
PWB-R	RAM Board	Remove the Rear Cover. ➡ Remove PWB-R.
UN1	Control Panel	Swing down the Front Door. ➡ Remove the Control Panel.
UN2	Original Size Detecting Board	Remove the Rear Cover ➡ Remove UN2.
UN3	AIDC Sensor	Swing down the Front Door. ➡ Remove the PC Unit. ➡ Remove the PC Drum Charge Corona. ➡ Remove the PC Drum. ➡ Remove the PC Drum Paper Separator Finger Holder Assy. ➡ Remove the AIDC Sensor.
UN4	ATDC Sensor	Swing down the Front Door. ➡ Remove the PC Unit. ➡ Remove the ATDC Sensor.
PU1	DC Power Supply Unit	Remove the Rear Cover. ➡ Remove the PWB-A Mounting Bracket Assy. ➡ Remove the Power Supply Unit Cover. ➡ Remove PU1.
PU2	Power Supply Unit	Remove the Rear Cover. ➡ Remove the PWB-A Mounting Bracket Assy. ➡ Remove the AFR Connector Unit. ➡ Remove PU2.
HV1	High Voltage Unit	Remove the Rear Cover. ➡ Remove the HV1 Cover. ➡ Remove HV1.

2-3. PAPER TAKE-UP/TRANSPORT SECTIONS

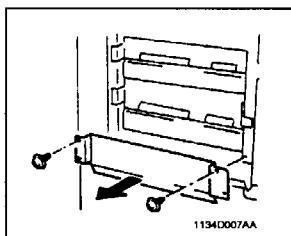
(1) Removal of the Paper Take-Up Unit

1. Remove the Right Door, Right Cover, and Rear Cover.
2. Remove the 1st and 2nd Drawers. (For the removal of the 1st and 2nd Drawers, see p. D-15.)
3. Remove four locking wiring saddles.
4. Unplug three connectors from S/P Board PWB-F.
5. Disconnect the hookup connector.

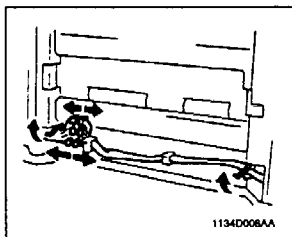


6. Remove two screws each to free 1st Drawer Paper Take-Up Motor M11 and 2nd Drawer Paper Take-Up Motor M12.

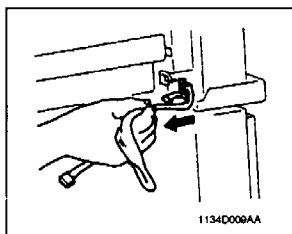
* For ease of understanding, the illustration shows where the connectors and Paper Take-Up Motors are removed.



7. Remove two screws and the Paper Guide Plate.

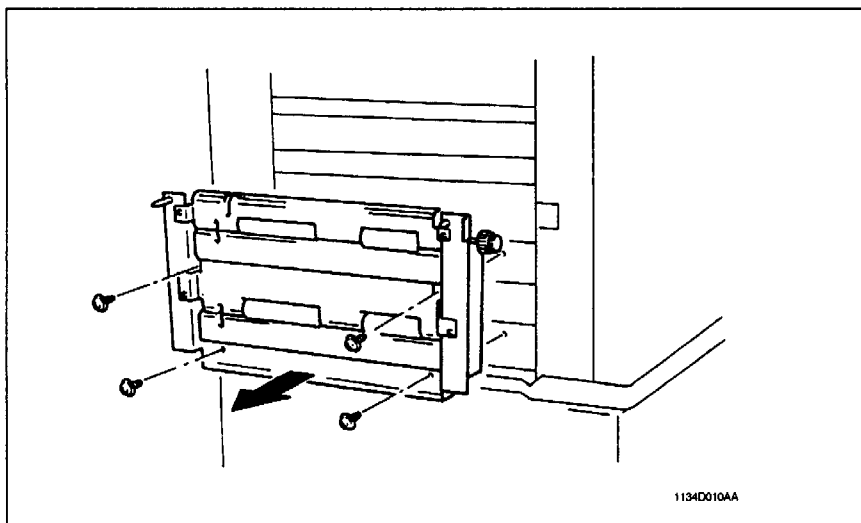


8. Remove two edge covers with locks.
9. Unplug three hookup connectors.



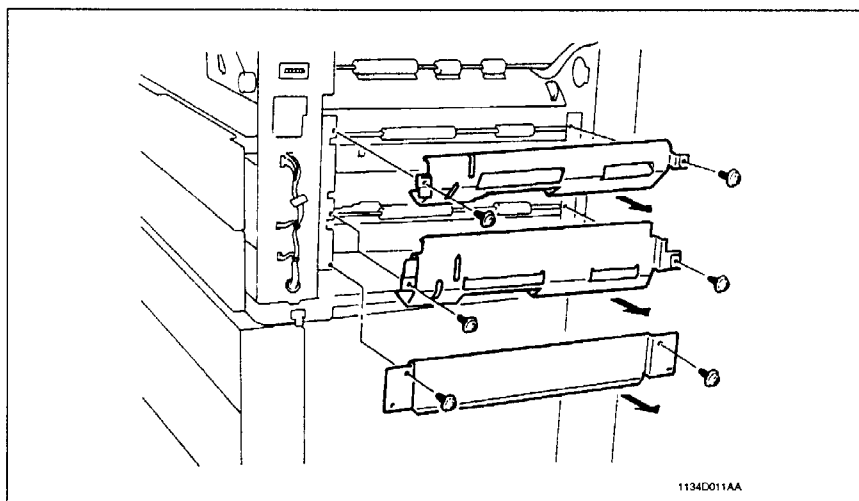
10. Pull the harness out to the front from the rear frame.

11. Remove four screws and the Paper Take-Up Unit.

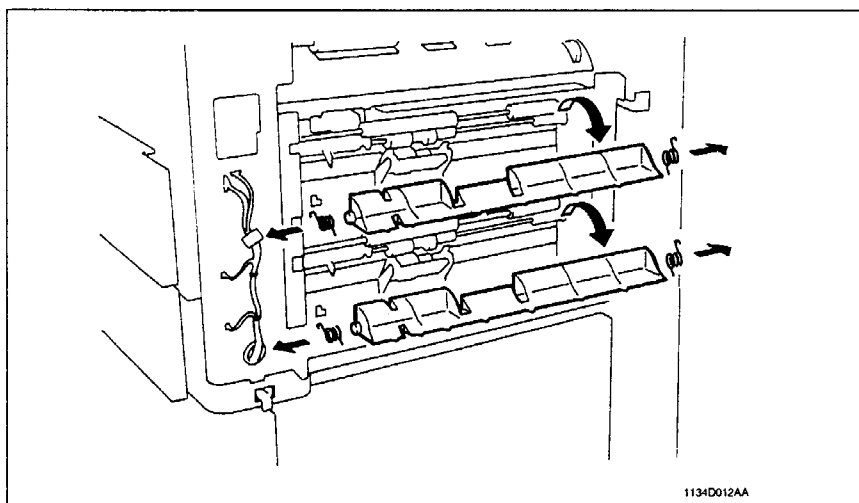


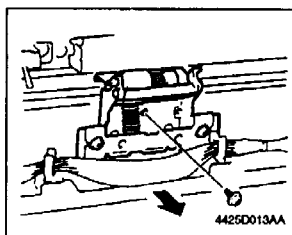
(2) Removal of the Paper Take-Up Roll/Feed Roll Assy and Separator Roll Assy

1. Remove the Right Door, Right Cover, and Rear Cover.
2. Remove two screws and the Paper Guide Plate from each drawer.



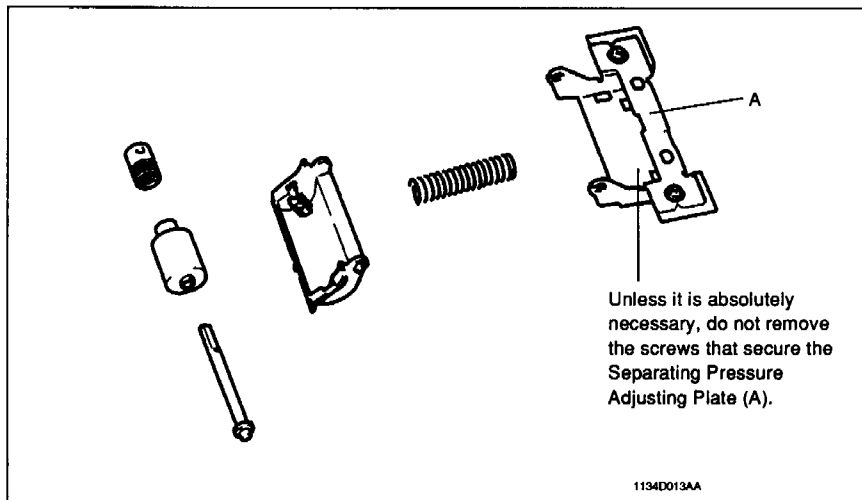
3. Unhook the front and rear springs from the copier frame. Remove the Paper Separator Roll/Paper Guide Plate Assy by turning it about 90° in the direction of the arrow.

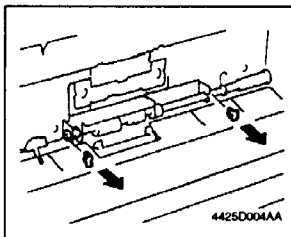




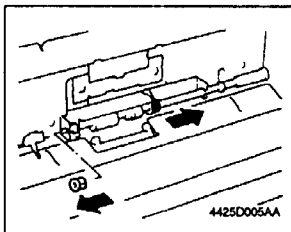
4. Remove one screw and the Paper Separator Roll Assy Mounting Bracket from each drawer. (The illustration shows how the Paper Separator Roll Assy is removed from the 2nd Drawer.)

5. Disassemble the Paper Separator Roll Assy.

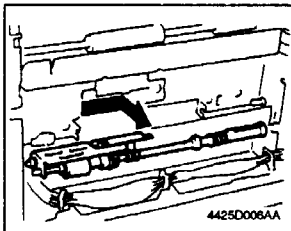




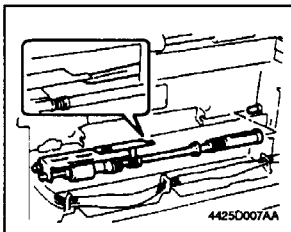
6. Remove two C-clips from each Paper Take-Up Roll/Feed Roll Assy. (The illustration is for the Paper Take-Up Roll/Feed Roll Assy for the 2nd Drawer.)



7. Remove the bushing from the front end of each Paper Take-Up Roll/Feed Roll Assy.
8. Remove the rear bushing from the holder.



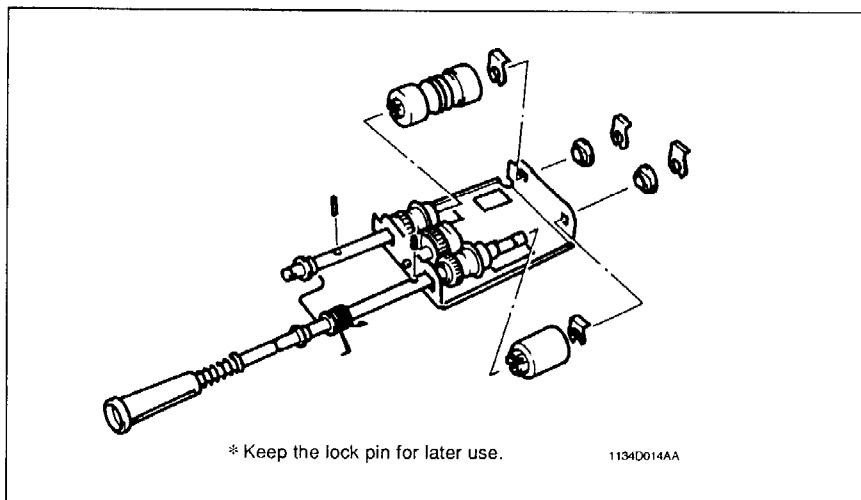
9. Move the coupling holder of each Paper Take-Up Roll/Feed Roll Assy in the direction of the arrow to work it off the pin of the copier. This allows the Paper Take-Up Roll/Feed Roll Assy to come out of the copier.



NOTE

When reinstalling the Paper Take-Up Roll/Feed Roll Assy, place it above the Pressure Release Lever.

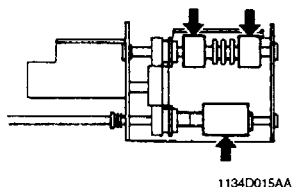
10. Disassemble the Paper Take-Up Roll/Feed Roll Assy.



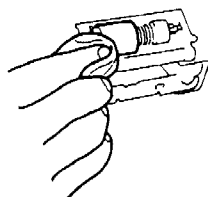
(3) Cleaning of the Paper Take-Up Roll, Feed Roll, and Separator Roll

1. Remove each Paper Take-Up Roll/Feed Roll Assy.
2. Remove each Paper Separator Roll Assy.
3. Using a soft cloth dampened with alcohol, wipe each roll clean of dirt.

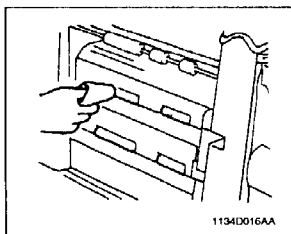
Cleaning the Paper Take-Up Roll/Feed Roll



Cleaning the Paper Separator Roll



(4) Cleaning of the Vertical Transport Rollers

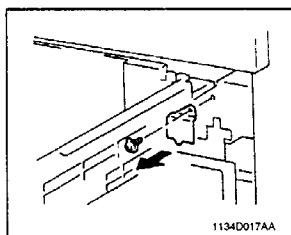


1. Remove the Right Door, Right Cover, and Rear Cover.
2. Using a soft cloth dampened with alcohol, wipe each roller clean of dirt.

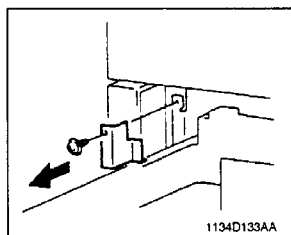
(5) Removal of the Drawers

* Though the following steps and illustrations are for the 1st Drawer, the same procedure applies also to the 2nd Drawer.

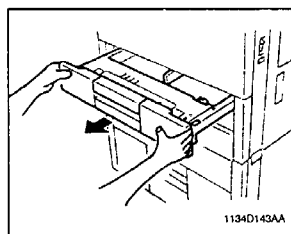
<Metric Areas>



1. Slide out the drawer and remove one screw and the right stopper.

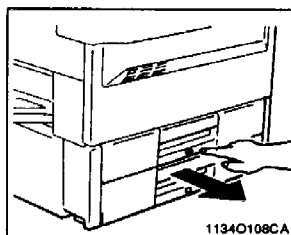


2. Remove one screw and the left stopper.

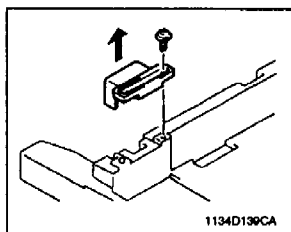


3. Remove the drawer from the copier.

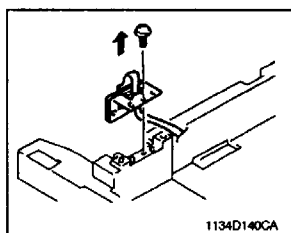
<Inch Areas>



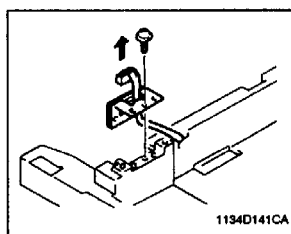
1. Turn ON Power Switch S1.
2. Press the Paper Descent Key and then slide out the drawer.



3. As with the metric areas, remove the right and left stoppers.
4. Remove one screw and the hookup connector cover.

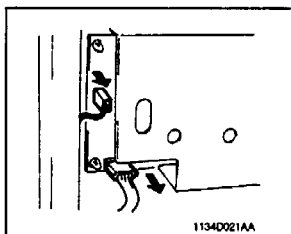


5. Remove one screw and the hookup connector mounting bracket.

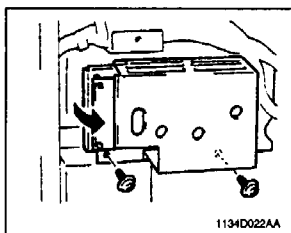


6. Unplug the hookup connector. Remove the drawer.

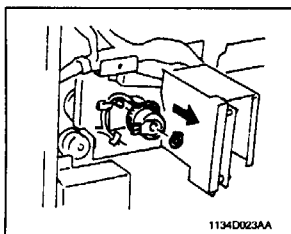
(6) Removal of the Upper Synchronizing Roller



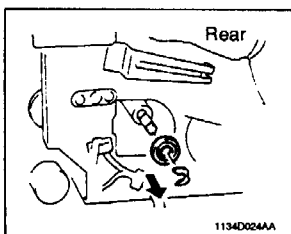
1. Remove the Rear Cover.
2. Unplug the bias terminal from High Voltage Unit HV1.
3. Unplug CN1 of HV1.



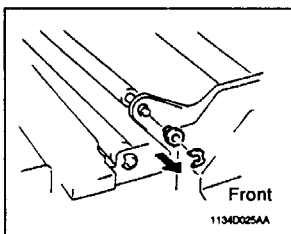
4. Remove two screws and open HV1.



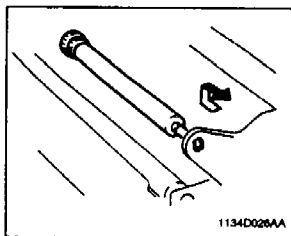
5. Snap off one E-ring to free Synchronizing Roller Clutch CL2.



6. Snap off the E-ring and remove the bushing from the rear end of the Upper Synchronizing Roller.

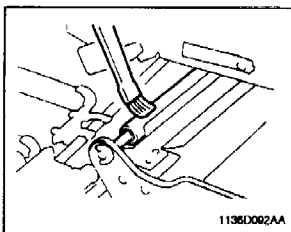


7. Swing down the Front Door and slide out the PC Unit.
8. Snap off the E-ring and remove the bushing from the front end of the Upper Synchronizing Roller.

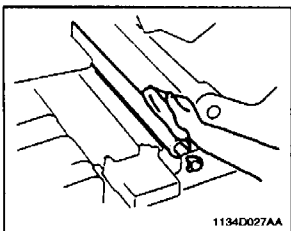


9. Remove the Upper Synchronizing Roller.

(7) Cleaning of the Upper and Lower Synchronizing Rollers

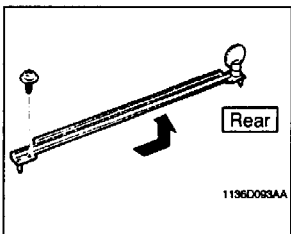


1. Swing down the Front Door and slide out the PC Unit.
2. Using a brush or a soft cloth dampened with alcohol, clean the Upper Synchronizing Roller.

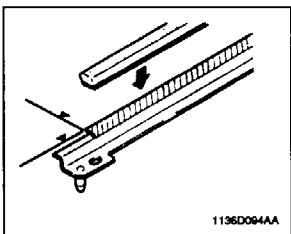


3. Swing down the Transport Section Release Lever.
4. Using a brush or a soft cloth dampened with alcohol, clean the Lower Synchronizing Roller.

(8) Replacement of the Paper Dust Remover

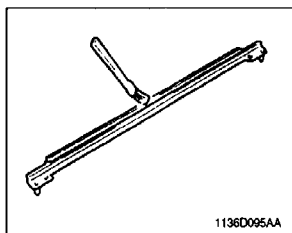


1. Swing down the Front Door and slide out the PC Unit.
2. Loosen the screw that secures the Paper Dust Remover Assy at the rear of the copier.
3. Remove the screw that secures the Paper Dust Remover Assy at the front of the copier.
4. Remove and replace the Paper Dust Remover Assy.



5. When only the Paper Dust Remover is to be replaced, affix the new one along the reference line as shown on the left.

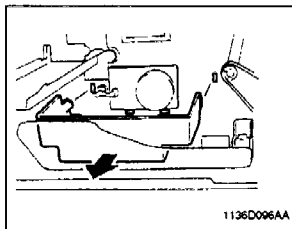
(9) Cleaning of the Paper Dust Remover



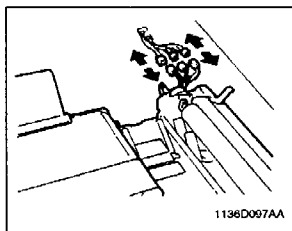
1. Remove the Paper Dust Remover Assy.
2. Using a brush, whisk dust off the Paper Dust Remover.

(10) Removal of the Suction Unit

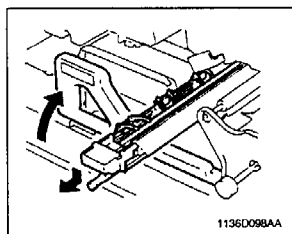
1. Remove the 1st and 2nd Drawers.
2. Swing down the Front Door and slide out the PC Unit.
3. Remove the Paper Dust Remover Assy.
4. Remove the Fusing Unit.



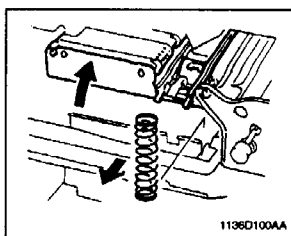
5. Remove the motor cover.



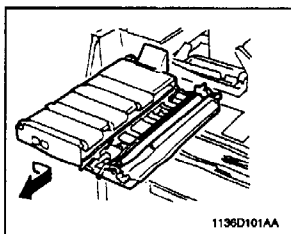
6. Unplug three connectors from the lower end of the Suction Unit.



7. Swing the Transport Section Release Lever back to its original position.
8. Pressing down the Image Transfer/Paper Separator Coronas Unit, pull it out of the copier.



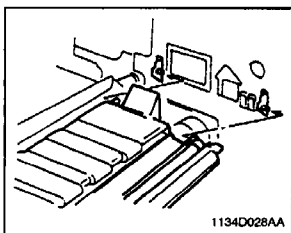
9. Swing down the Transport Section Release Lever.
10. Holding up the Suction Unit, remove the compression coil.



11. Remove the Suction Unit by sliding it to the right.

NOTE

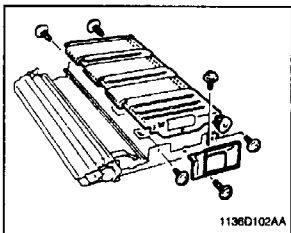
When removing and reinstalling the Suction Unit, use care not to bend the ground plate located on the right in the rear.



NOTE

When reinstalling the Suction Unit, make sure that two positioning pins on the copier fit into the positioning holes in the Suction Unit.

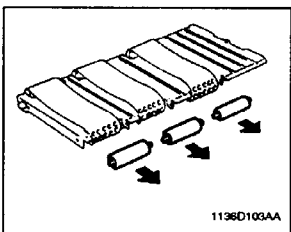
(11) Disassembly of the Suction Unit



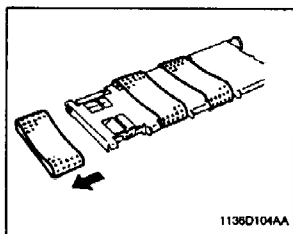
1. Remove the Suction Unit.
2. Remove two screws and the duct.
3. Remove four screws and the Suction Drive Unit.

NOTE

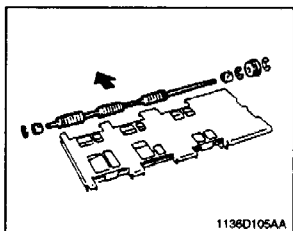
When reinstalling the Suction Drive Unit, try to press it down against the Suction Base Plate.



4. Remove three driven rolls.

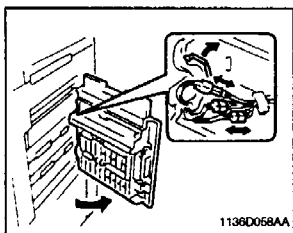


5. Remove three Suction Belts.

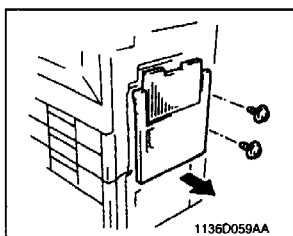


6. Remove the Suction Roller as shown on the left.

(12) Disassembly of the Multi Bypass Unit



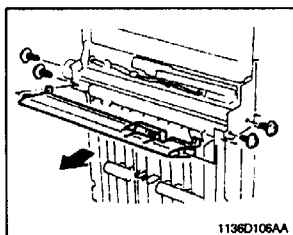
1. Open the Right Door.
2. Remove the harness from one locking wiring saddle.
3. Unplug three connectors.



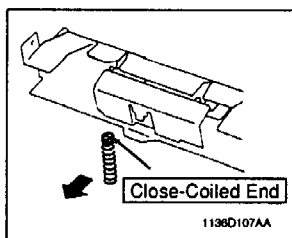
4. Remove two screws and the Right Door.

NOTE

The Right Door must be adjusted for correct position when it is reinstalled. (See p. D-103.)



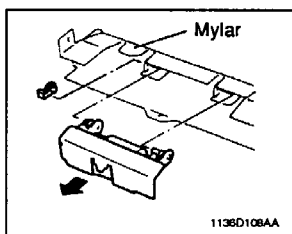
5. Remove four screws and the Separator Guide Plate Assy.



6. Remove the compression coil.

NOTE

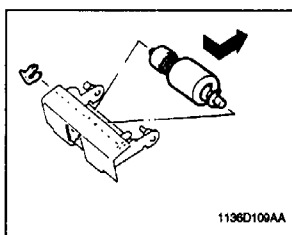
When reinstalling the compression coil, place it so that its close-coiled end faces the Separator Unit.



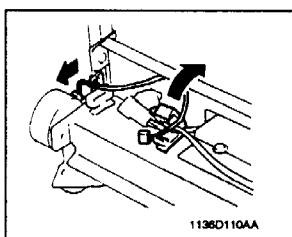
7. Remove one C-clip and the Separator Assy.

NOTE

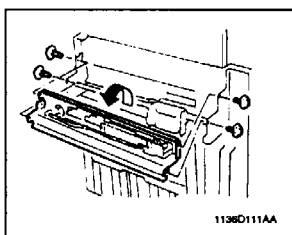
When removing the C-clip, use care not to bend the mylar.



8. Remove one C-clip and the Separator Roll Assy.



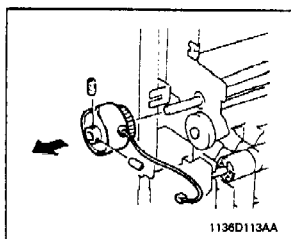
9. Remove the harness from the edge cover and cord clamp.



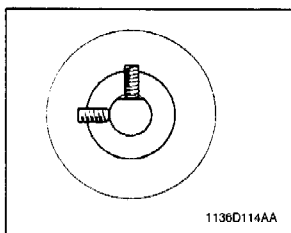
10. Remove four screws and the Solenoid Mounting Bracket.

NOTE

When the solenoid has been replaced or the solenoid mounting screws removed, be sure to adjust the position of the solenoid. (For the adjustment procedure, see p. D-100.)

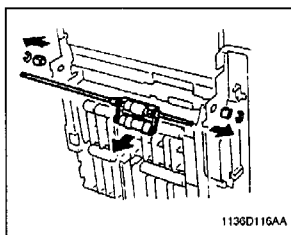
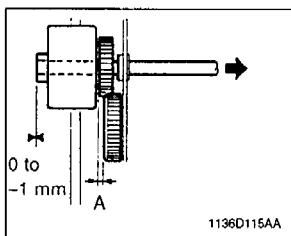


11. Remove two set screws and the electromagnetic spring clutch.

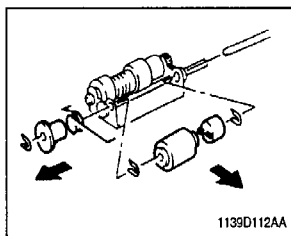


NOTES

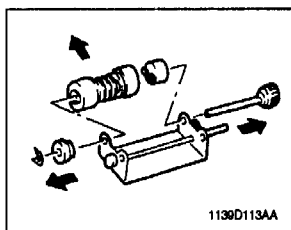
- When reinstalling the electromagnetic spring clutch, orient the Paper Take-Up Roll shaft and the clutch as shown on the left.
- The end of the clutch must be flush with or slightly recessed (up to 1 mm) from the end face of the Paper Take-Up Roll shaft. (The roll shaft should never protrude.)
- There must be a gap of 1 mm or more at A when the Paper Take-Up Roll shaft is pushed in the direction of the arrow.



12. Snap off two C-clips and remove the Paper Take-Up Roll Assy.

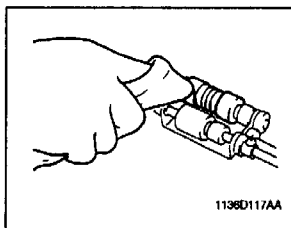


13. Snap off three C-clips and remove the Feed Roll.



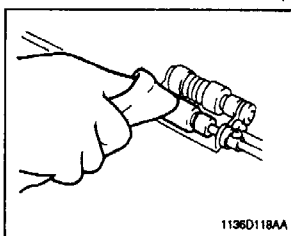
14. Snap off the C-clip and remove the Paper Take-Up Roll.

• Cleaning of the Manual Bypass Paper Take-Up Roll



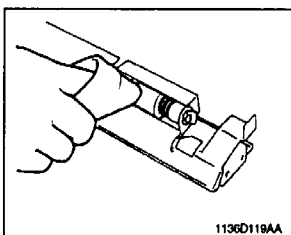
Using a soft cloth dampened with alcohol, clear the Paper Take-Up Roll.

• Cleaning of the Manual Bypass Feed Roll



Using a soft cloth dampened with alcohol, clean the Feed Roll.

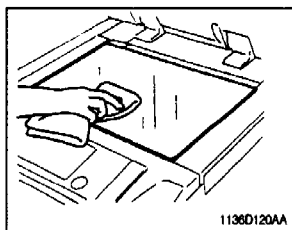
• Cleaning of the Manual Bypass Separator Roll



Using a soft cloth dampened with alcohol, clean the Separator Roll.

2-4. OPTICAL SECTION

(1) Cleaning of the Original Glass

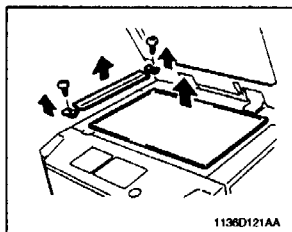


Wipe clean the Original Glass with a soft cloth.

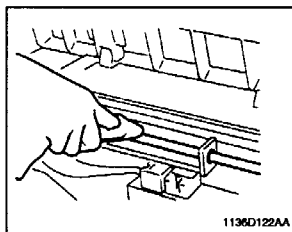
NOTE

*The surface of the Original Glass is coated with conductive material. Do not use a wax-based detergent.
An alcohol-dampened cloth may be used if the glass is seriously contaminated.*

(2) Cleaning of the Scanner Shaft

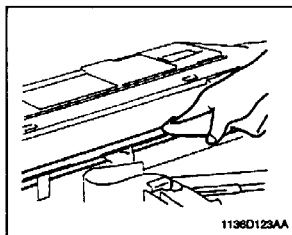


1. Remove the Original Width Scale.
2. Remove the Original Glass.



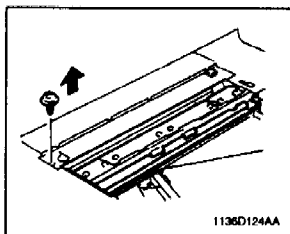
3. Wipe clean the Scanner Shaft (in the rear of the copier) with a soft cloth.

(3) Cleaning of the Scanner Rail

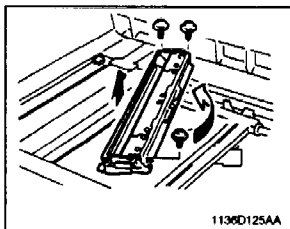


Wipe clean the Scanner Rail (at the front of the copier) with a soft cloth.

(4) Removal of the Scanner



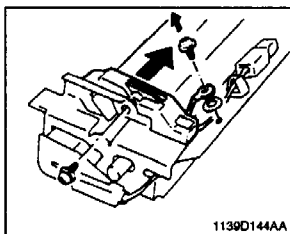
1. Work a screwdriver through the hole in the frame at the left front side of the copier and remove the screw that secures the Scanner.



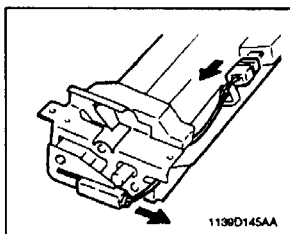
2. Move the Scanner to the right-hand side of the copier. Remove three screws to free the Scanner.

NOTE

*Hold the Scanner at a point near the Scanner Shaft when moving it.
To remove the Scanner, turn it counterclockwise.*

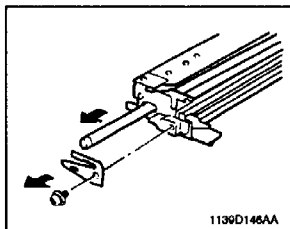


3. Remove one screw and the wire guide.
4. Remove one screw and the ground wire.



5. Unplug the Exposure Lamp terminal connector.
6. Unplug the Thermal Fuse terminal connector.
7. Remove the Scanner from the copier.

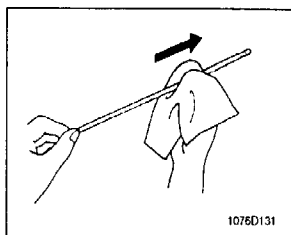
(5) Cleaning of the Exposure Lamp



1. Remove one screw and the Exposure Lamp terminal.
2. Slide out the Exposure Lamp.

NOTE

When the Exposure Lamp has been cleaned or replaced, be sure to make the "adjustment of exposure level in the Auto Exposure mode." (See p. D-74.)

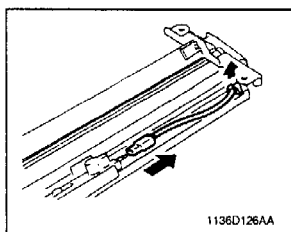


- Using a soft cloth dampened with alcohol, clean the lamp by gently wiping its surface in one direction.

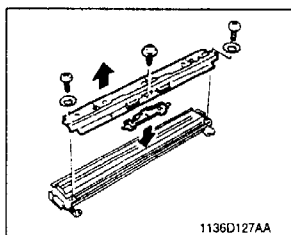
NOTE

When reinstalling the lamp, point the protruding navel of the lamp toward the opening in the Lamp Reflector so that the protruding navel will not hit against the Lamp Reflector.

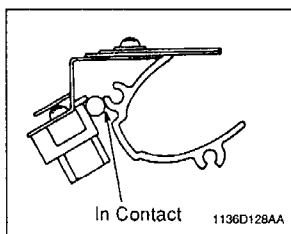
(6) Removal of the Thermal Fuse



- Unplug the Thermal Fuse connector.
- Remove the Thermal Fuse cord from the clamp.



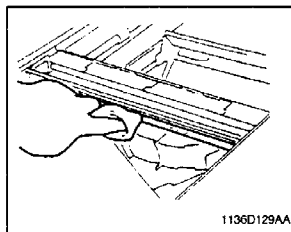
- Remove two screws and the Aperture Plates Assy.
- Remove one screw and the Thermal Fuse.



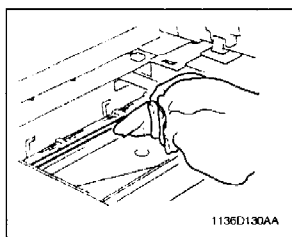
NOTE

The Thermal Fuse must be in contact with the Lamp Reflector when installed.

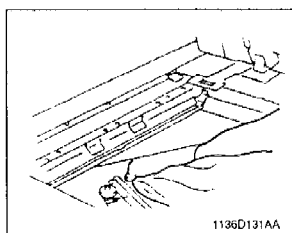
(7) Cleaning of the 1st, 2nd, and 3rd Mirrors



- Wipe clean the 1st Mirror with a soft cloth.

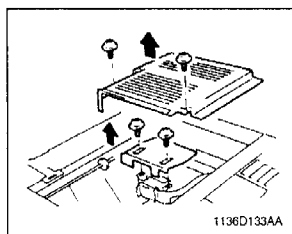


2. Wipe clean the 2nd Mirror with a soft cloth.

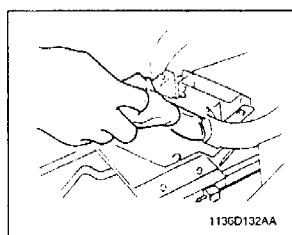


3. Wipe clean the 3rd Mirror with a soft cloth.

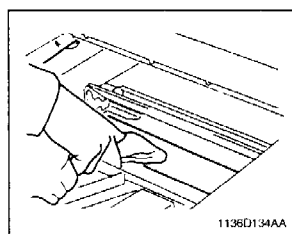
(8) Cleaning of the Lens and 4th and 5th Mirrors



1. Remove the Original Glass.
2. Remove two screws and the Optical Cover.
3. Remove two screws and the Lens Cover.

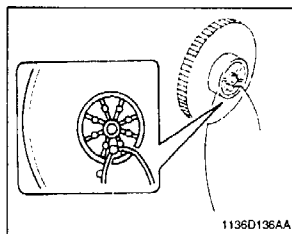
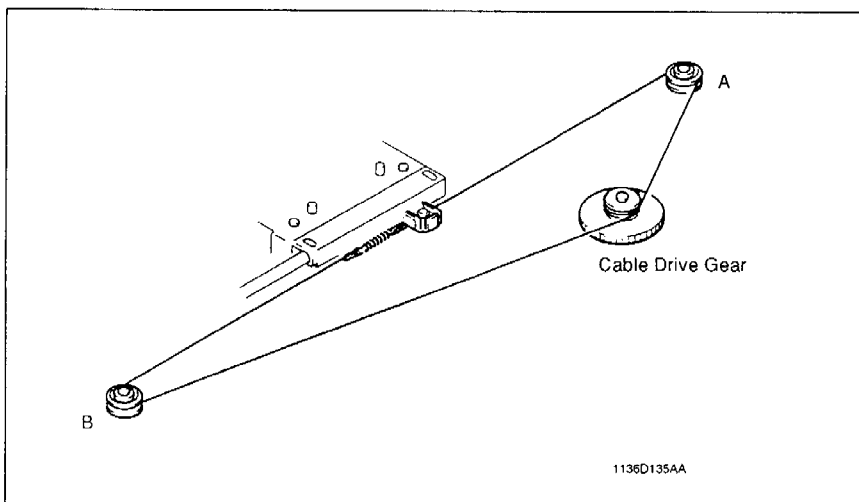


4. Gently dust off the surface of the Lens using a soft cloth.

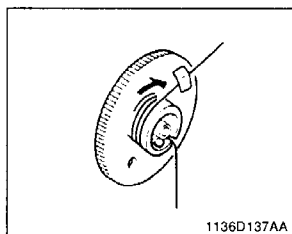


5. Wipe clean the 4th and 5th Mirrors with a soft cloth.

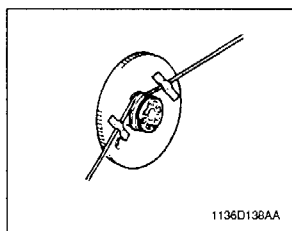
(9) Winding of the Lens Drive Cable



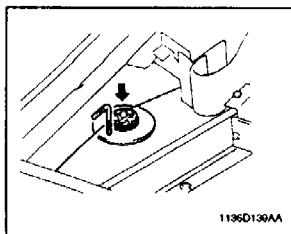
1. Hold the Cable Drive Gear with the bead at the bottom.



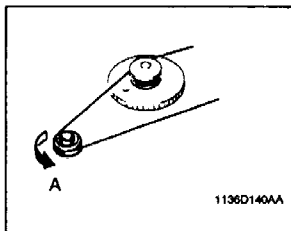
2. Wind the longer length of the cable three and 1/4 turns clockwise around the Cable Drive Gear, working from the back to the front side. Then tape it.



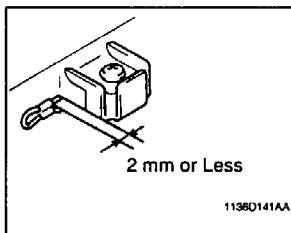
3. Wind the shorter length of the cable three and 1/2 turns counterclockwise around the Cable Drive Gear, working from the front to back side. Then tape it.



4. Pass the longer length of the cable through the hole in the light blocking plate.
5. Slide the Cable Drive Gear onto its shaft and insert a wrench into the hole (4-mm dia.) to position the gear.



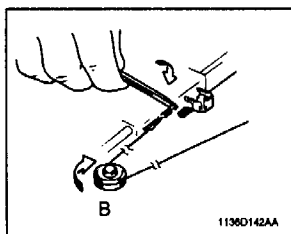
6. Wind the shorter length of the cable around pulley A.



7. Secure the shorter length of the cable to the Cable Fixing Bracket.

NOTE

Ensure a distance of 2 mm or less for the dimension shown on the left.



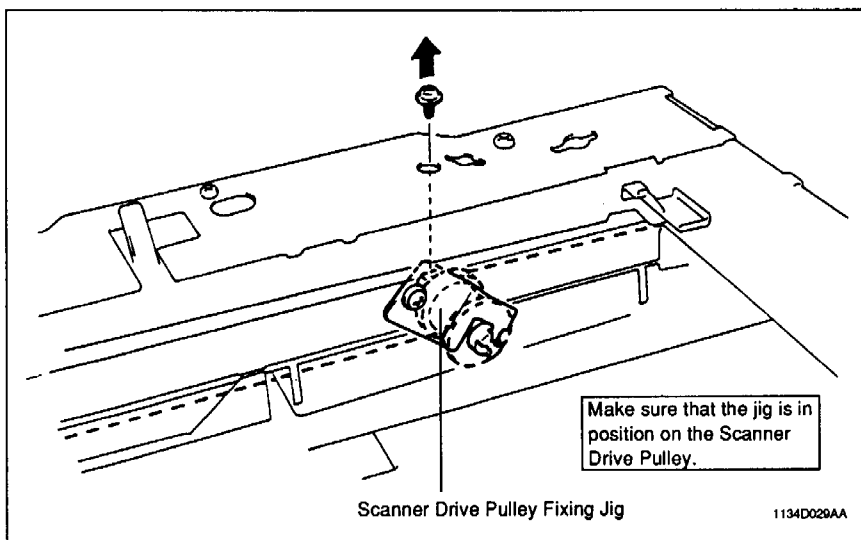
8. Wind the longer length of the cable around pulley B.
9. Hook the spring onto the longer length of the cable and pull the spring to hook it onto the shorter length of the cable.
10. Remove the wrench and peel off the two pieces of tape used in steps 2 and 3.

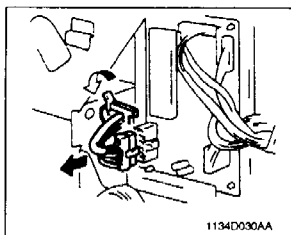
(10) Removal of Scanner Motor M2

1. Remove the Original Cover.
2. Remove the Right Cover, Rear Cover, and Rear Upper Cover.
3. Remove the Original Glass.
4. Remove the Optical Cover.
5. Turn the Scanner Motor shaft so that the screw that secures the Scanner Drive Pulley to the Scanner Motor shaft is aligned with the hole in the optical frame in the rear. Then, remove this screw.
6. Fix the Scanner Drive Pulley Fixing Jig with a screw to secure the Scanner Drive Pulley in position.

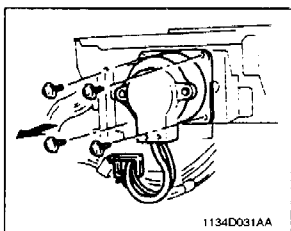
NOTE

Be sure to use the Scanner Drive Pulley Fixing Jig when removing the Scanner Motor. If it is not used, the Scanner Drive Pulley is left free, allowing the cable to come unwound.





7. Unplug one connector. Then, remove the edge cover with a lock and the harness.



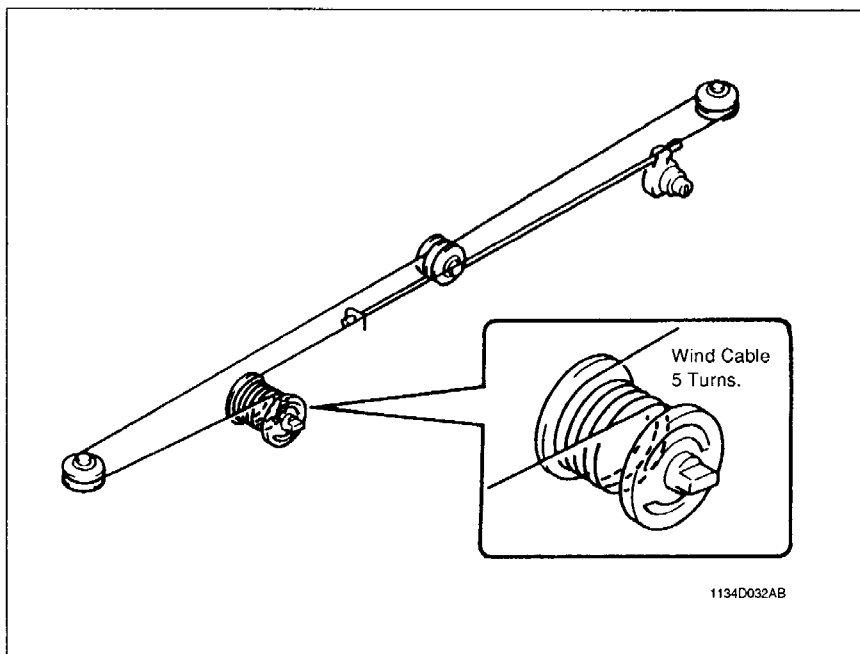
8. Remove the locking wiring saddle and the harness.
9. Remove four screws and Scanner Motor M2.

(11) Winding of the Scanner Drive Cable

◆Important

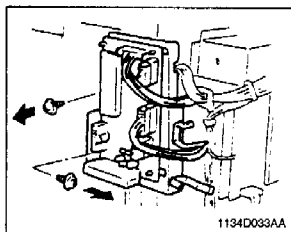
When the Scanner Drive Cable has been wound:

- 1) Perform the "focus-positioning of the Scanner and Mirrors Carriage."
- 2) Slide the Scanner by hand to check for cable tension before turning the copier ON.
- 3) No part of the cable should ride on others when winding the cable around the Cable Drive Pulley.
Further, no part in the cable should be bent or no part of the cable jacket fray.
* Wind the cable five turns around the Cable Drive Pulley.



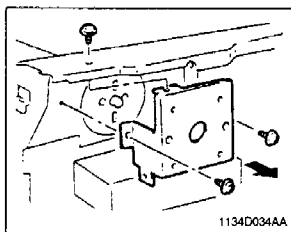
(12) Removal of the Scanner Drive Cable

1. Remove the Original Cover.
2. Remove the Right Cover, Rear Cover, Rear Upper Cover, and Upper Left Cover.
3. Remove the Original Glass.
4. Remove the Scanner and Optical Cover.
5. Remove Scanner Motor M2.

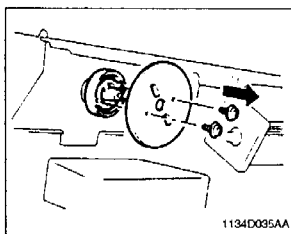


6. Remove two screws to free the SCP Board (PWB-J) mounting bracket.

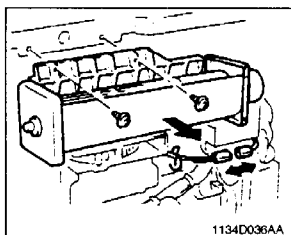
* The illustration shows where the SCP Board has been removed for ease of understanding.



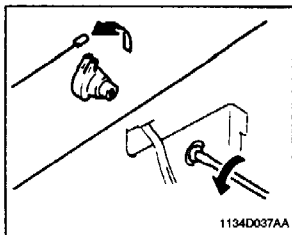
7. Remove three screws and the Scanner Motor mounting bracket.



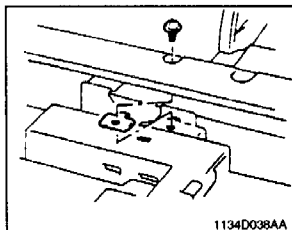
8. Remove two screws and the disk.



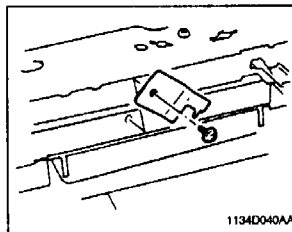
9. Remove one locking wiring saddle and unplug one connector.
10. Remove two screws and Original Glass Cooling Fan Motor M5.



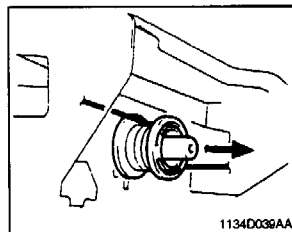
11. Using a flat blade screwdriver, loosen the right spring anchor to unhook the bead from the anchor, thereby removing the cable.



12. Move the Scanner to the center and remove one screw that positions the Scanner and the Scanner Fixing Bracket.

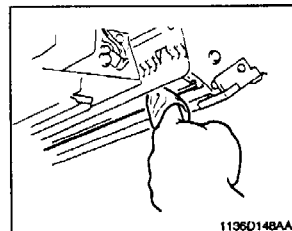


13. Remove one screw and the Scanner Drive Pulley Fixing Jig.



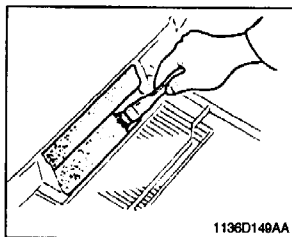
14. Move the Scanner Drive Cable from the inside of the upper frame to the Scanner Drive Pulley side. Then, remove the Scanner Drive Pulley and Scanner Drive Cable.

(13) Cleaning of the 6th Mirror Protective Filter



Using a soft cloth, wipe clean the 6th Mirror Protective Filter.

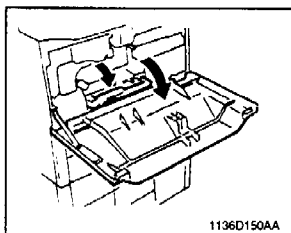
(14) Cleaning of the Cooling Fan Filter



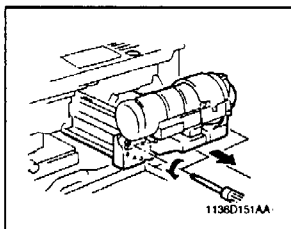
1. Remove six screws and the Rear Cover.
2. Clean the Cooling Fan Filter using a brush or a vacuum cleaner.

2-5. PC UNIT

(1) Removal of the PC Unit

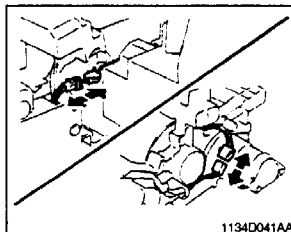


1. Swing down the Front Door.
2. Swing the Transport Section Release Lever down.

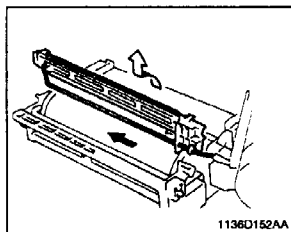


3. Loosen two screws that secure the PC Unit.
4. Slide out the PC Unit.

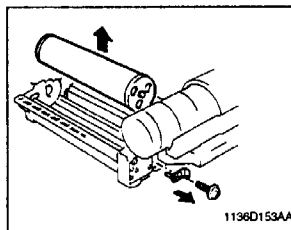
(2) Disassembly of the PC Unit



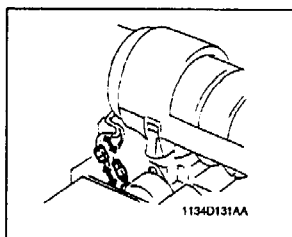
1. Swing open the Main Hopper and unplug two connectors.
2. Unplug one connector in the rear.



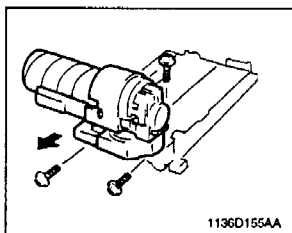
3. Remove the PC Drum Charge Corona by moving it to the rear.



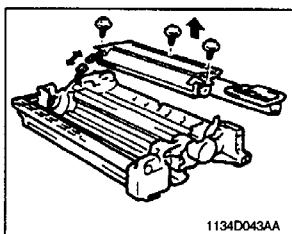
4. Remove one screw and the stopper.
5. Remove the PC Drum.



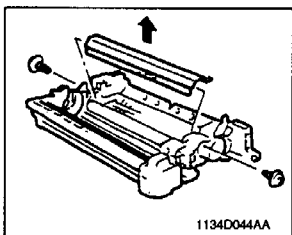
6. Unplug two connectors of the Main Hopper.



7. Remove three screws and the Main Hopper.



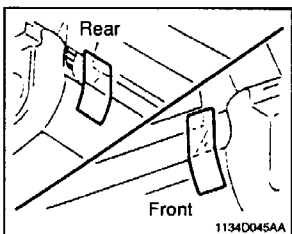
8. Unplug one connector and remove three screws and the Sub Hopper.



9. Remove two screws and the Developer Scattering Prevention Plate.

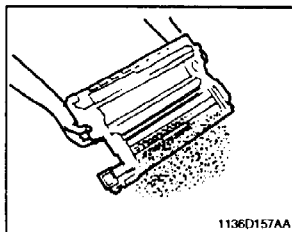
NOTE

Do not remove the Doctor Blade Assy, as a changed Db could result.

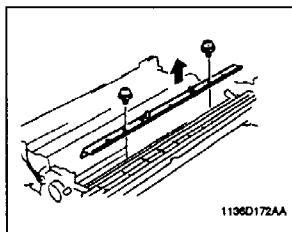


NOTE

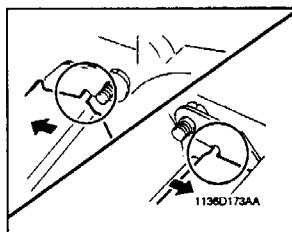
Install the Developer Scattering Prevention Plate so that its seal is placed behind the side seals of the Developer Mixing Chamber.



10. Dump the developer out of the Developing Unit.

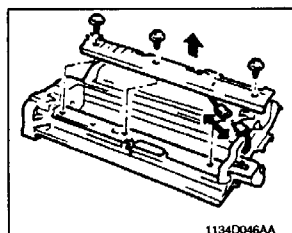


11. Remove two screws and the Cleaning Blade.

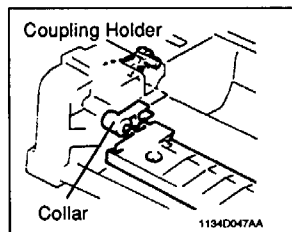


NOTE

When reinstalling the Cleaning Blade, press the blade tightly up against the mounting bracket.



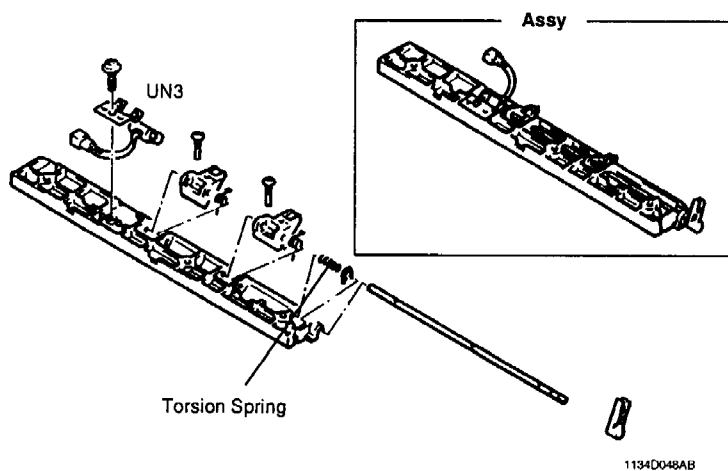
12. Unplug one connector.
13. Remove three screws and the PC Drum Paper Separator Finger Holder Assy.



NOTE

When reinstalling the PC Drum Paper Separator Finger Holder Assy, fit the collar of the assy onto the coupling holder in the rear.

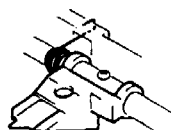
14. Remove the PC Drum Paper Separator Fingers and AIDC Sensor UN3 as shown below.



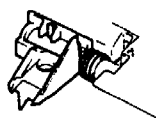
*** PC Drum Paper Separator Fingers**

At removal and reinstallation, use care not to damage the tip of the fingers.
Use also care not to get hurt by the tip of the fingers.

PC Drum Paper Separator Finger Installed



Front Side

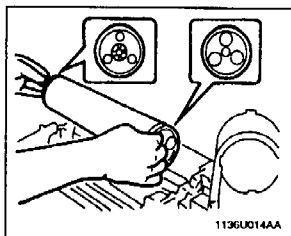


Back Side

1134D048AA

* Hook the torsion spring properly.
After installation, check that the
Paper Separator Fingers operate
smoothly.

(3) Replacement of the PC Drum

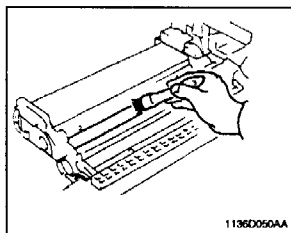


1. Slide out the PC Unit.
2. Remove one screw and the stopper.
3. Remove and replace the PC Drum.

NOTE

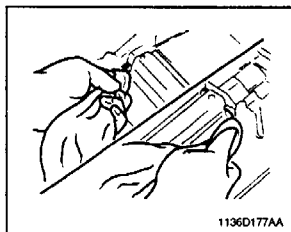
When the PC Drum has been replaced, reset the count of "PC Drum" of "Port/Option" counters of the Tech. Rep. mode and then make the "adjustment of exposure level in the Auto Exposure mode." (For the "adjustment of exposure level in the Auto Exposure mode," see p. D-74.)

(4) Cleaning of the Developer Scattering Prevention Plate



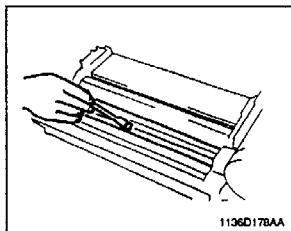
Using a brush, whisk dust off the Developer Scattering Prevention Plate.

(5) Cleaning of the Ds Positioning Collars



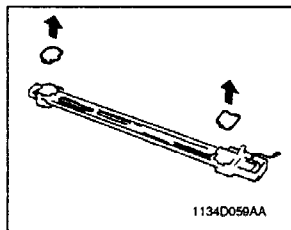
Using a brush or a soft cloth dampened with alcohol, clean the Ds Positioning Collars.

(6) Cleaning of the Toner Antispill Trap



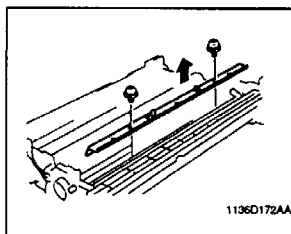
Using a brush or a vacuum cleaner, clean the Toner Antispill Trap.

(7) Cleaning of the Cleaning Blade

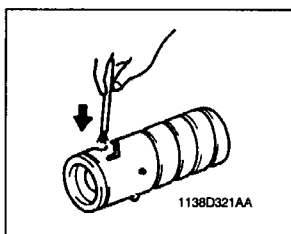


Using a brush, whisk paper dust and toner off the Cleaning Blade.

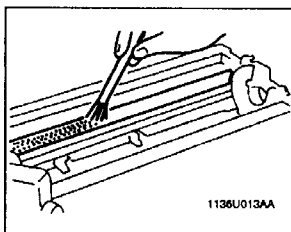
(8) Replacement of the Cleaning Blade



1. Remove and replace the Cleaning Blade.



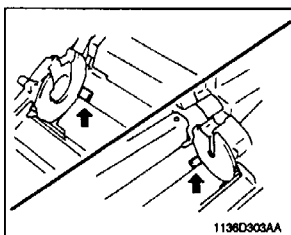
2. Remove the Toner Bottle from the PC Unit. Insert a brush through the toner port and into the toner.



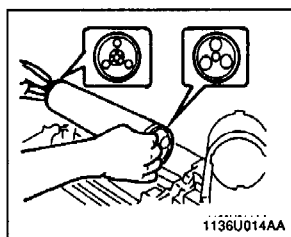
3. Apply toner to the entire surface of the new Cleaning Blade.

NOTE

Be sure to apply toner to both end faces of the Cleaning Blade.



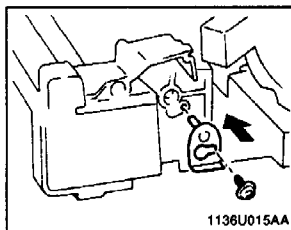
4. Using the brush, apply lubricant shipped with the Cleaning Blade to the two side seals shown.



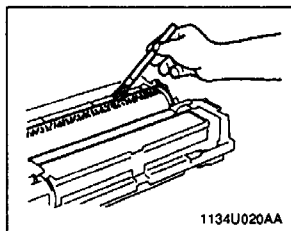
5. Install the PC Drum.

NOTE

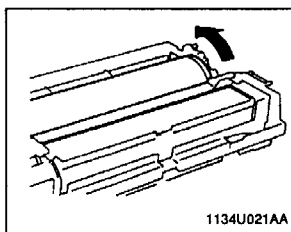
Do not touch the surface of the PC Drum with bare hands. Hold onto both ends of the PC Drum when installing the drum.



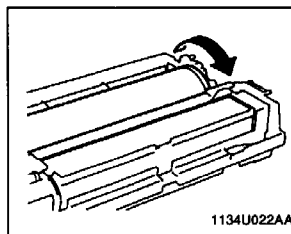
6. Secure the PC Drum stopper with one screw.



7. Apply a thin coat of toner to an approx. 30-mm-wide area along the entire length of the PC Drum.

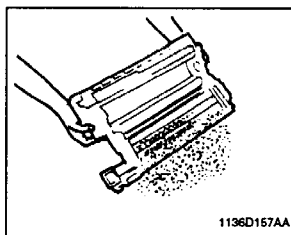


8. Hold onto both ends of the PC Drum and turn the PC Drum about 1/2 turn in the direction of the arrow.



9. Hold onto both ends of the PC Drum and turn the PC Drum about one turn in the direction of the arrow.

(9) Replacement of the Starter



1. Dump the developer out of the Developing Unit.

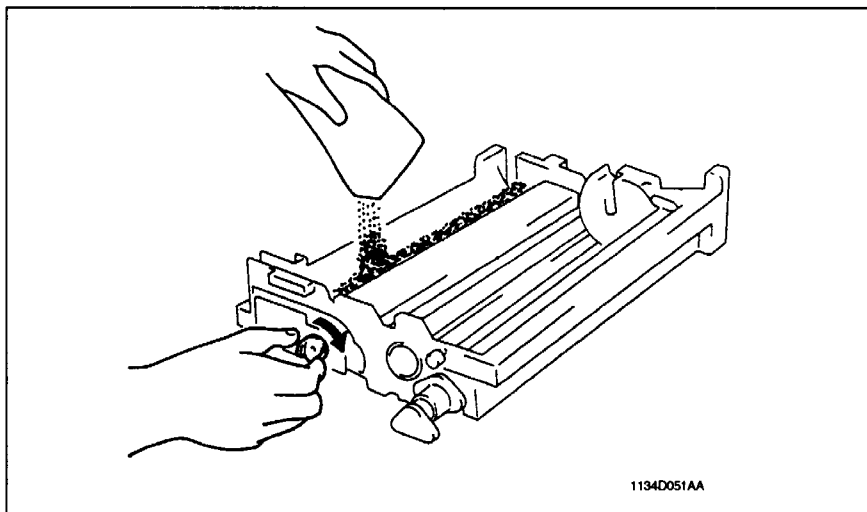
2. Turning the Bucket Roller, pour fresh starter evenly into the chamber.

NOTE

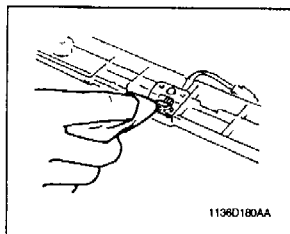
Shake the packet of starter well before opening it.

NOTE

When the starter has been replaced, reset the count of "Starter" of the "Port/Option" counters of the Tech. Rep. mode and then make the ATDC adjustment. (For the ATDC adjustment, see p. D-71.)

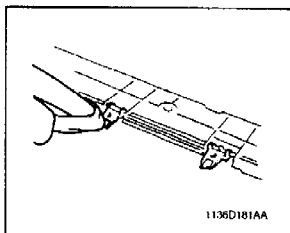


(10) Cleaning of the AIDC Sensor



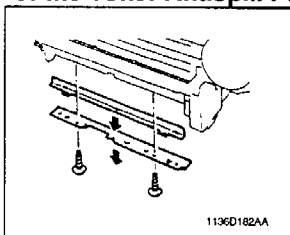
1. Remove the PC Drum Paper Separator Fingers Assy.
2. Using a brush or a soft cloth dampened with alcohol, clean the AIDC Sensor.

(11) Cleaning of the PC Drum Paper Separator Fingers

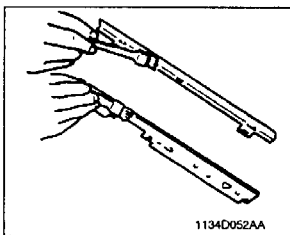


1. Remove the PC Drum Paper Separator Fingers Assy.
2. Using a brush or a soft cloth dampened with alcohol, clean the PC Drum Paper Separator Fingers.

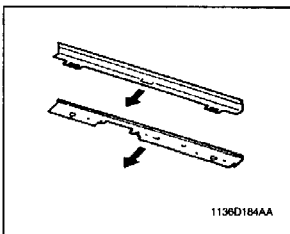
(12) Replacement and Cleaning of the Toner Antispill Seal and Cleaning of the Toner Antispill Plate



1. Remove the PC Unit.
2. Remove two screws, the Toner Antispill Plate, and Toner Antispill Seal.
3. Replace the Toner Antispill Seal.



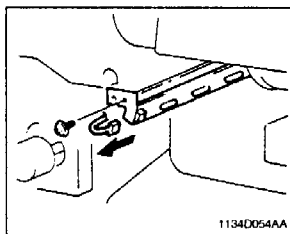
4. Using a brush, clean the Toner Antispill Seal.
5. Using a brush, clean the Toner Antispill Plate.



NOTE

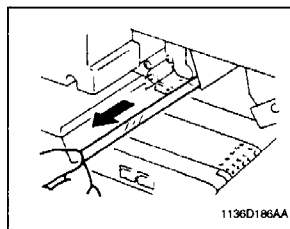
When reinstalling the Toner Antispill Plate and Toner Antispill Seal, press them in the direction of the arrows.

(13) Removal of Main Erase Lamp LA3

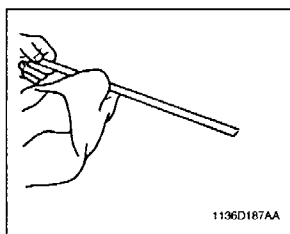


1. Swing down the Front Door.
2. Unplug one connector.
3. Remove one screw and Main Erase Lamp LA3.

(14) Cleaning of the Main Erase Lamp Filter

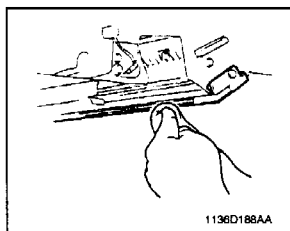


1. Swing down the Front Door.
2. Remove the Main Erase Lamp Filter.



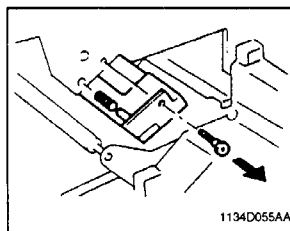
3. Using a soft cloth dampened with alcohol, wipe clean the Main Erase Lamp Filter.

(15) Cleaning of Image Erase Lamp LA2

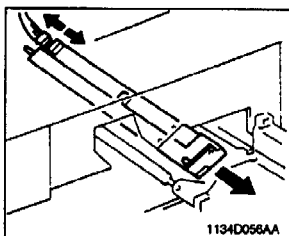


1. Swing down the Front Door.
2. Remove the PC Unit.
3. Using a soft cloth dampened with alcohol, wipe clean Image Erase Lamp LA2.

(16) Replacement of Image Erase Lamp LA2



1. Swing down the Front Door.
2. Remove the PC Unit.
3. Remove one adjusting screw to free Image Erase Lamp LA2.

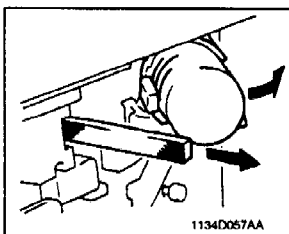


- Unplug one connector in the rear and remove Image Erase Lamp LA2.

NOTE

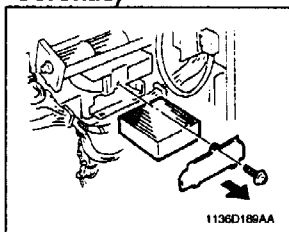
When Image Erase Lamp LA2 has been removed, make the "adjustment of edge erase." (For the adjustment of edge erase, see p. D-??.)

(17) Removal of the Ozone Filter (PC Drum Charge Corona)



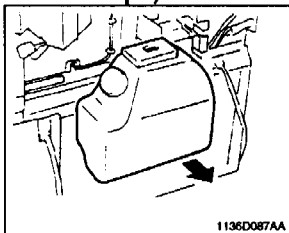
- Swing down the Front Door.
- Swing out the Main Hopper.
- Slide out the Ozone Filter.

(18) Removal of the Ozone Filter (Image Transfer/Paper Separator Coronas)



- Remove the Rear Cover.
- Remove one screw and the Filter Cover.
- Pull out the Ozone Filter.

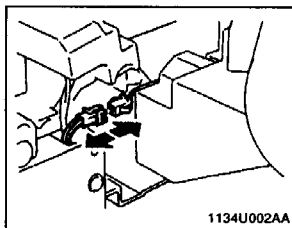
(19) Removal of the Toner Collecting Box (Except the U.S.A., Canada, and Europe)



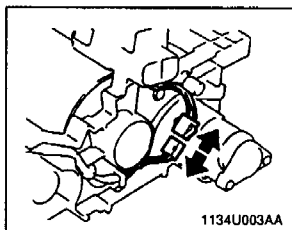
- Remove the Rear Cover.
 - Remove the Toner Collecting Box.
- * For removal of the large capacity Toner Collecting Box, please refer to the instructions on the large capacity Box.

2-6. PC DRUM CHARGE CORONA AND IMAGE TRANSFER/PAPER SEPARATOR CORONAS

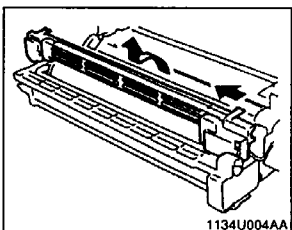
(1) Removal of the PC Drum Charge Corona



1. Swing down the Front Door.
2. Remove the PC Unit.
3. Swing out the Main Hopper and unplug the connector of Charge Corona Wire Spool Motor M10 at the front.



4. Unplug the connector of Charge Corona Wire Spool Sensor PC32 in the rear.

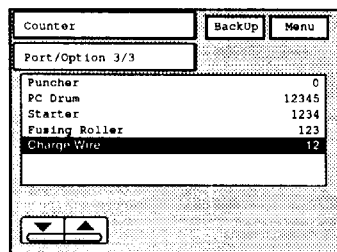


5. Move the PC Drum Charge Corona to the rear and pull it off.

(2) Replacement of the PC Drum Charge Corona Wire Assy

The corona wire should be replaced when

- The wire has snapped.
- "Charge Wire" of the "Port/Option" counters reads about 180 (K).

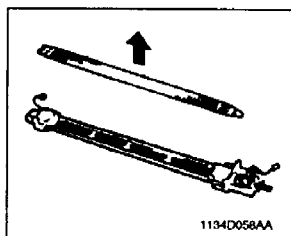


To check for the count of "Charge Wire," access the "Port/Option 3/3" screen through the following:

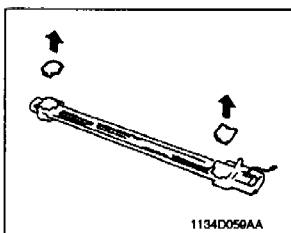
Tech. Rep. → Counter → Port/Option 1/3 → Port/Option 3/3.

NOTE

When the PC Drum Charge Corona Wire Assy has been replaced, press the Clear Key to reset the count to 0 and touch Menu to validate the resetting.



1. Remove the PC Drum Charge Corona.
2. Press the Mesh Holder at the front and remove the Grid Mesh.



3. Remove the Mesh Holder Covers at the front and rear.

NOTE

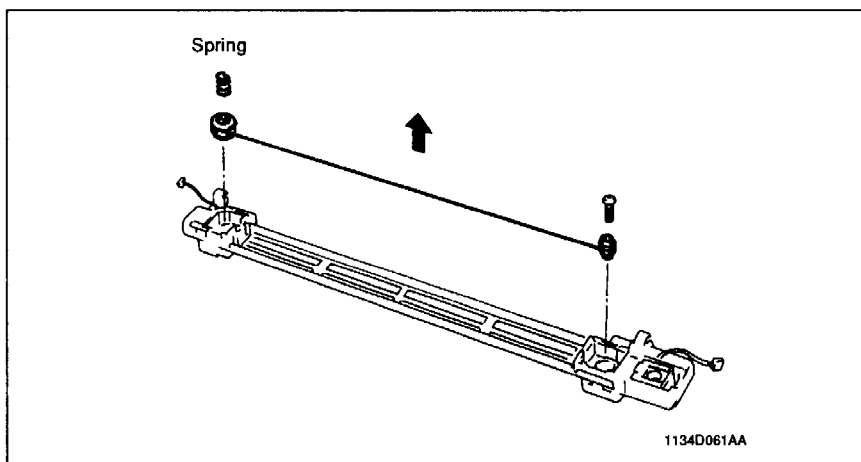
Remove the rear Holder only when the PC Drum Charge Corona Wire Assy is to be replaced with a new one. When it is removed, the spring tends to sag and the rear Bobbin turns to give slack to the wire.

4. Remove one screw from the front Take-Up Bobbin.
5. Holding onto the front and rear Bobbins, remove the PC Drum Charge Corona Wire Assy and install a new wire assy.

NOTES

Observe the following precautions when installing a new PC Drum Charge Corona Wire Assy.

- *The wire should not be twisted, bent, or broken when installed. (If it is, it can snap off when tightened.)*
- *Do not touch the wire with bare hands, as uneven charging could result.*
- *When "Charge Wire" of the "Port/Option" counters is reset to 0 after the new wire assy has been installed, the corona wire is automatically taken up 1(K) count (which is equivalent to about 20 mm). This gives an adequate tension to the wire.*



(3) Cleaning of the PC Drum Charge Corona Wire

As a rule, the PC Drum Charge Corona Wire is not to be cleaned. Should it be contaminated causing uneven charging, the following step can be taken.

- Take up the corona wire as necessary to expose a clean, new portion of the wire.

When the function "Advance Charge Wire" of "System Input" available from the Tech. Rep. mode menu is invoked, the wire is taken up a length of about 104 mm.

NOTE

This method, however, shortens the PM cycle of the PC Drum Charge Corona Wire Assy.

<"Advance Charge Wire" Steps>

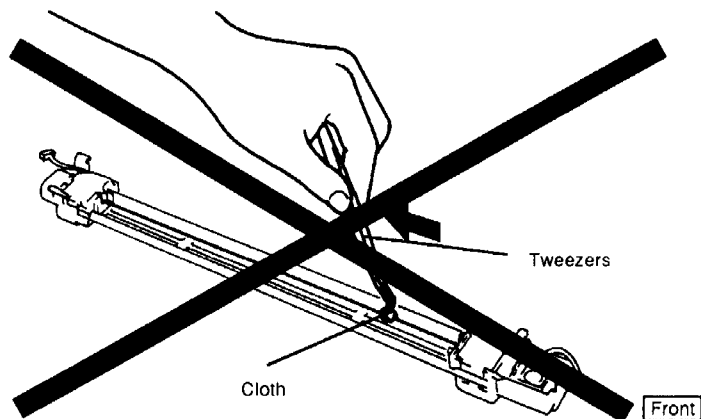
1. Set the copier into the Tech. Rep. mode by pressing the keys in the following order:

Stop → **"0"** → **Stop** → **"1"**

2. Select "System Input" on the "Tech. Rep. Mode Menu."

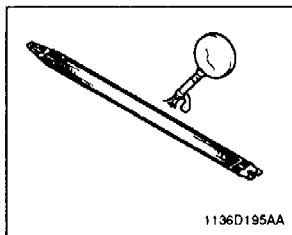
3. Select "Advance Charge Wire" on the "System Input" screen and touch [Enter] to let the copier take up the corona wire.

NEVER clean the wire using the following procedure, as a slack wire results.



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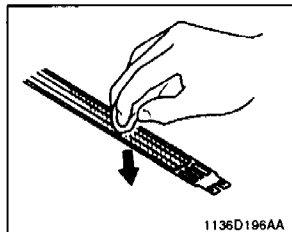
(4) Cleaning of the PC Drum Charge Corona Grid Mesh



1. Blow all foreign matter off the Grid Mesh with a blower brush.

NOTE

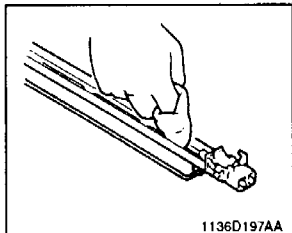
If the blower brush is not effective in cleaning the Grid Mesh, use a soft cloth dampened with alcohol to clean serious contamination.



NOTE

*Place the Grid Mesh on a flat surface and sweep the cloth along the mesh.
Do not touch the cleaned Grid Mesh with bare hands.*

(5) Cleaning of the PC Drum Charge Corona Housing

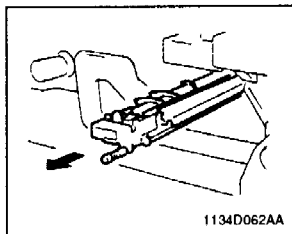


1. Remove the Grid Mesh.
2. Using a soft cloth dampened with alcohol, clean the corona housing.

NOTE

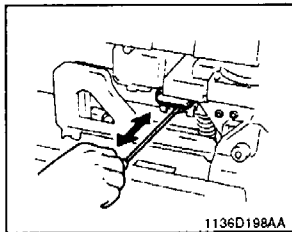
When wiping the housing clean, use care not to touch the wire, as a slack wire results.

(6) Removal of the Image Transfer/Paper Separator Coronas

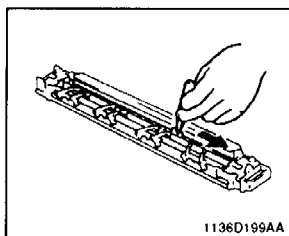


1. Swing down the Front Door.
2. Pull out the Image Transfer/Paper Separator Coronas.

(7) Cleaning and Replacement of the Image Transfer Corona Wire

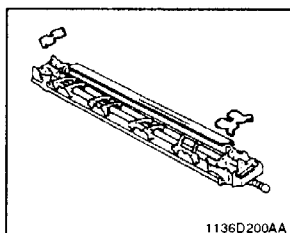


1. Swing down the Front Door.
2. Clean the Image Transfer Corona Wire using the Corona Wire Cleaning Lever.

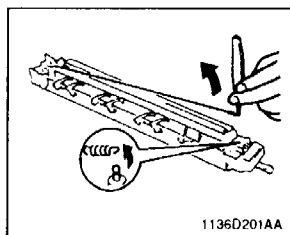


NOTE

If the Image Transfer Corona Wire is seriously contaminated, dampen a soft cloth with alcohol, hold it with a pair of tweezers, and wipe the wire gently in one direction - from the hook end to the spring end.

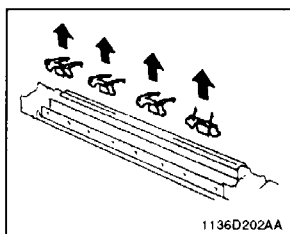


3. Remove the Holder Covers at the front and rear.

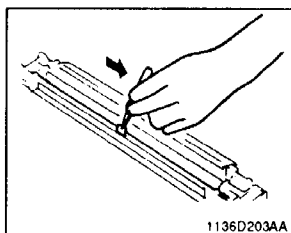


4. Remove the corona wire, first at the spring end.
5. Replace the corona wire with a new one.

(8) Cleaning and Replacement of the Paper Separator Corona Wire

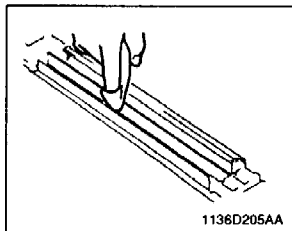


1. Remove four Paper Guides.



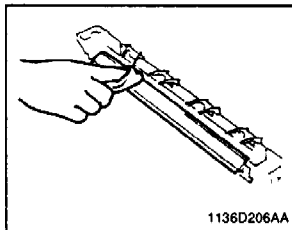
2. Dampen a soft cloth with alcohol, hold it with a pair of tweezers, and wipe the Paper Separator Corona Wire gently in one direction - from the hook end to spring end.
3. Replace the Paper Separator Corona Wire by using the same procedure as that for the Image Transfer Corona Wire.

(9) Cleaning of the Image Transfer/Paper Separator Coronas Housing



1. Remove four Paper Guides.
2. Remove the Holder Covers at the front and rear.
3. Remove the Image Transfer and Paper Separator Corona Wires - first at the spring end.
4. Using a soft cloth dampened with alcohol, wipe the housing clean of dirt.

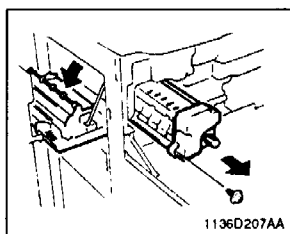
(10) Cleaning of the Lower Pre-Image Transfer Guide Plate



Using a soft cloth dampened with alcohol, wipe clean the Lower Pre-Image Transfer Guide Plate.

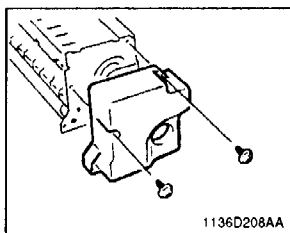
2-7. FUSING UNIT

(1) Removal of the Fusing Unit

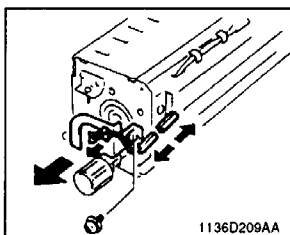


1. Open the Left Door.
2. Swing down the Front Door.
3. Remove one screw and the Fusing Unit.

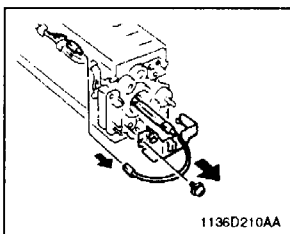
(2) Disassembly of the Fusing Unit



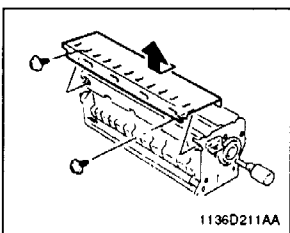
1. Remove two screws and the Front Cover.



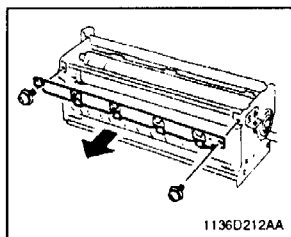
2. Unplug the Heater Lamp connector at the front.
3. Remove the Heater Lamp cord from the wiring saddle.
4. Remove one screw and the Lamp Holder at the front.



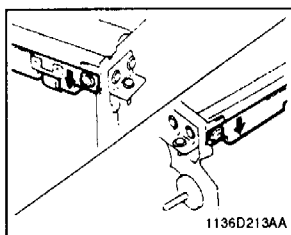
5. Unplug the Heater Lamp connector in the rear.
6. Remove one screw and the Lamp Holder in the rear.
7. Remove the Heater Lamp cord from the wiring saddle.
8. Remove the Heater Lamp.



9. Remove two screws and the Upper Cover.

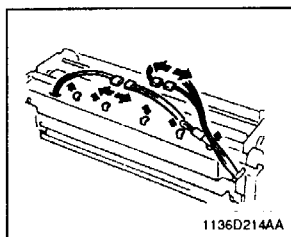


10. Remove two screws and the Upper Fusing Paper Separator Finger mounting bracket.

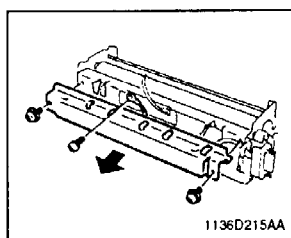


NOTE

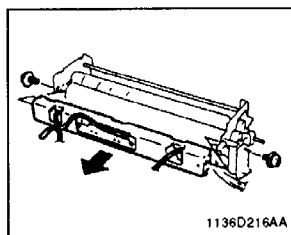
When reinstalling the Upper Fusing Paper Separator Finger mounting bracket, be sure that both ends of the bracket are in tight contact with the frame.



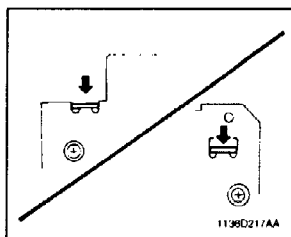
11. Remove the harness from the Harness Guide.
12. Unplug the connectors of the two Thermistors.



13. Remove one screw, shoulder screw, and the Harness Guide.
14. Remove one screw and the Thermoswitch cord.



15. Remove two screws and the Temperature Detector Assy.



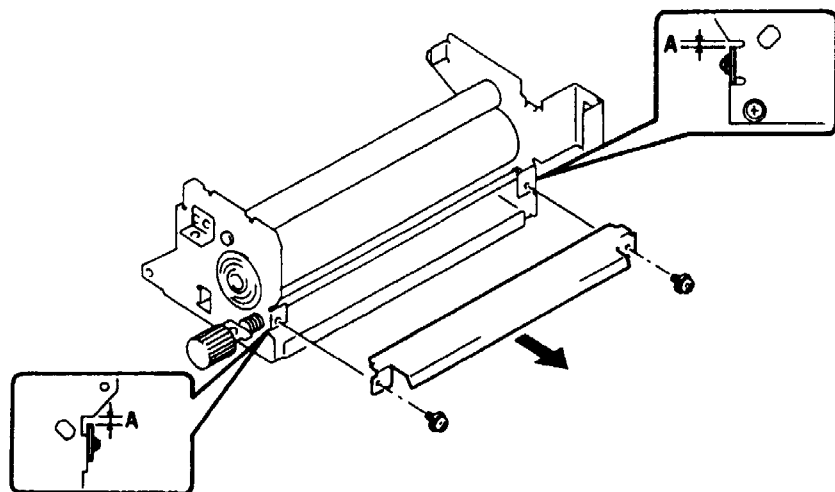
NOTE

When reinstalling the Temperature Detector Assy, be sure that both ends of the assy are in tight contact with the frame.

16. Remove two screws and the Fusing Unit Entrance Guide Plate.

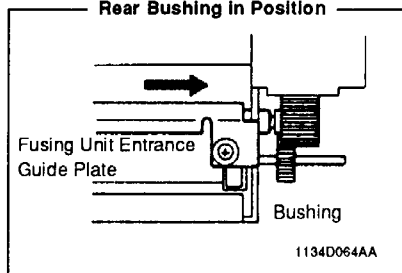
NOTE

When reinstalling the Fusing Unit Entrance Guide Plate, allow a clearance of 0.8 mm for dimension A shown below. Make also sure that the plate presses the bushing in the rear (drive end) in the thrust direction (in the direction of the arrow) at installation. (The plate should not ride on the rear bushing.)



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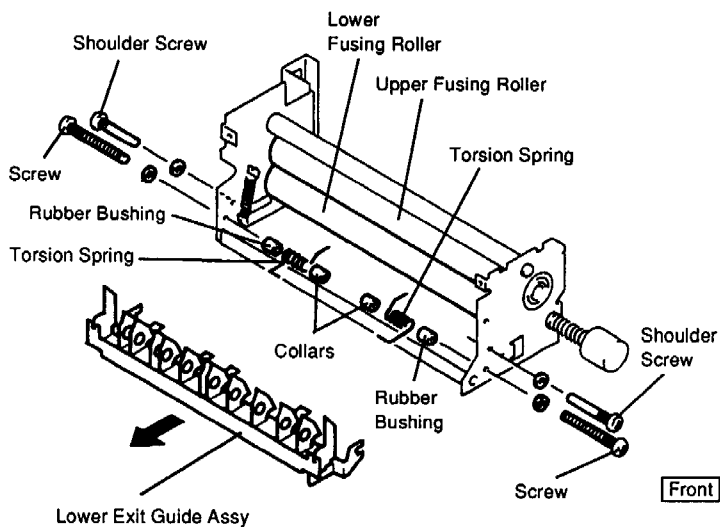
Rear Bushing in Position



17. Remove two shoulder screws and the Lower Exit Guide Assy.

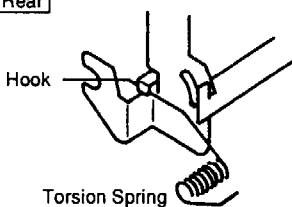
*The illustration below shows where the torsion springs have been removed.

Rear

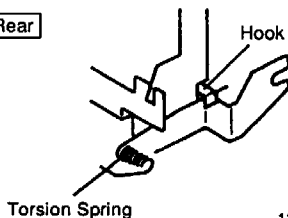


Torsion Springs in Position

Rear



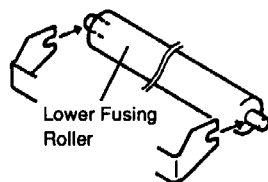
Rear



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Lower Exit Guide Assy In Position

① Installing the Lower Exit Guide Assy



② Lower Fusing Paper Separator Finger Contact



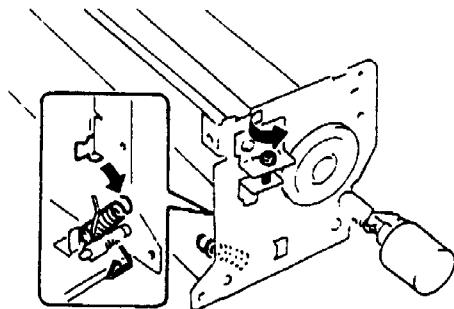
1134D067AA

18. Loosen the screw that secures the spring bracket at the front and then unhook the spring at the top.

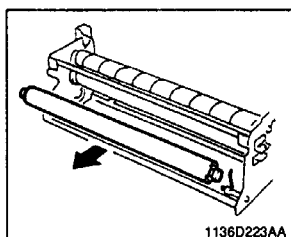
Repeat the same step for the spring in the rear.

NOTE

When reinstalling the springs, alternately tighten the bracket mounting screws until the brackets completely contact the ends of the Lower Exit Guide Assy.

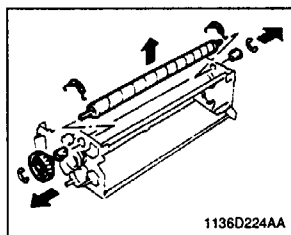


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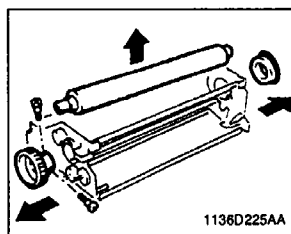
19. Remove the Lower Fusing Roller.



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20. Remove two extension springs.

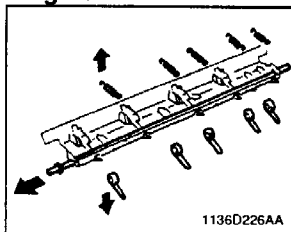
21. Remove two E-rings, the gear, bushing, and Cleaning Roller.



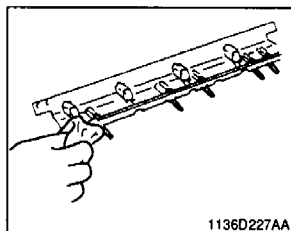
1136D225AA

22. Remove two screws, the Upper Fusing Roller drive gear, and Upper Fusing Roller.

(3) Replacement and Cleaning of the Upper Fusing Paper Separator Fingers

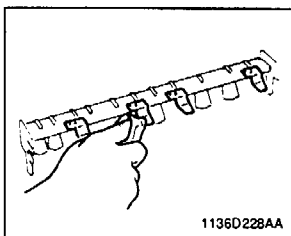


1. Remove the Upper Fusing Paper Separator Finger mounting bracket.
2. Remove five springs.
3. Slide out the shaft to remove the Upper Fusing Paper Separator Fingers.
4. Replace the fingers with new ones.



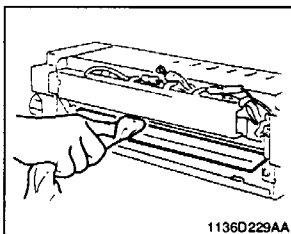
5. Using a soft cloth dampened with alcohol or silicone oil, wipe clean the Upper Fusing Paper Separator Fingers.

(4) Cleaning of the Lower Fusing Paper Separator Fingers



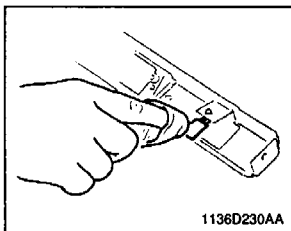
1. Remove the Lower Exit Guide Assy.
2. Using a soft cloth dampened with alcohol or silicone oil, wipe clean the Lower Fusing Paper Separator Fingers.

(5) Cleaning of the Fusing Unit Entrance Guide Plate



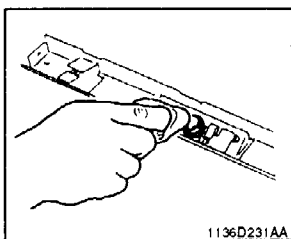
Using a soft cloth dampened with alcohol, wipe clean the Fusing Unit Entrance Guide Plate.

(6) Cleaning of Fusing Front and Rear Thermistors TH1/2



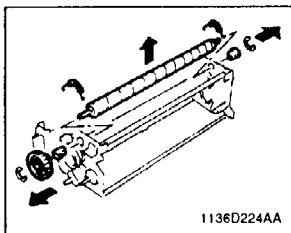
1. Remove the Temperature Detector Assy.
2. Using a soft cloth dampened with alcohol, wipe clean the two thermistors.

(7) Cleaning of Fusing Thermoswitch TS1

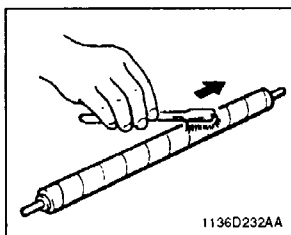


1. Remove the Temperature Detector Assy.
2. Using a soft cloth dampened with alcohol, wipe clean the thermoswitch.

(8) Replacement and Cleaning of the Cleaning Roller

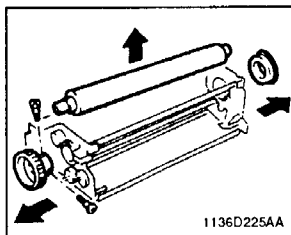


1. Remove two screws and the Upper Cover.
2. Remove the Cleaning Roller.
3. Replace the Cleaning Roller with a new one.

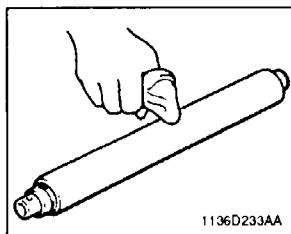


4. Using a brush, whisk dust off the Cleaning Roller.

(9) Replacement and Cleaning of the Upper Fusing Roller

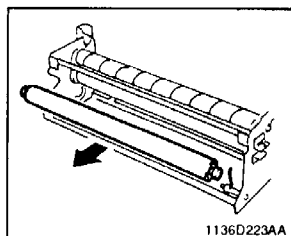


1. Remove the Upper Fusing Roller.
2. Replace the Upper Fusing Roller with a new one.

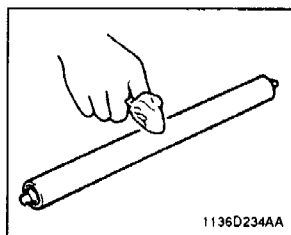


3. Using a soft cloth dampened with alcohol or silicone oil, wipe clean the Upper Fusing Roller.

(10) Replacement and Cleaning of the Lower Fusing Roller



1. Remove the Lower Fusing Roller.
2. Replace the Lower Fusing Roller with a new one.

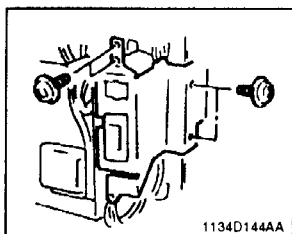


3. Using a soft cloth dampened with alcohol or silicone oil, wipe clean the Lower Fusing Roller.

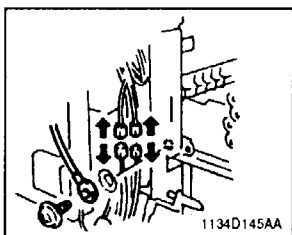
2-8. EXIT UNIT

(1) Removal of the Exit/Duplex Switching Unit

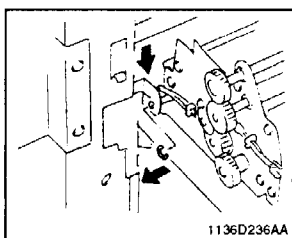
1. Remove the Rear Cover.
2. Open the Left Door.
3. Remove the Upper Left Cover.



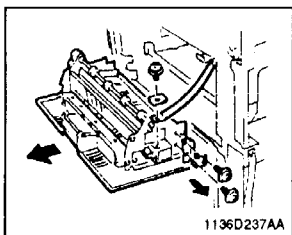
4. Remove four screws to free the Sorter Connector Assy.



5. Unplug two connectors.
6. Remove one screw and the ground wire.



7. Snap off the E-ring from the shaft onto which the Exit/Duplex Switching Unit is mounted.
8. Work the harness indicated by the arrow off the wiring saddle.



9. Remove one screw that holds the belt.
10. Remove two screws and the mounting bracket.
11. Remove the Exit/Duplex Switching Unit.

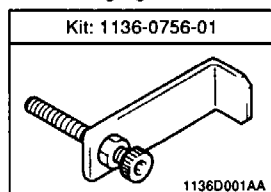
3 ADJUSTMENT

3-1. JIGS AND TOOLS USED

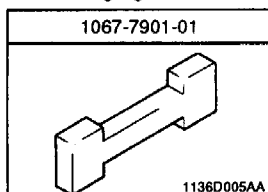
◆ Important

- When positioning the Scanner and 2nd/3rd Mirrors Carriage, use jig nos. ③ and ④.
- When adjusting the gap between the Doctor Blade and Sleeve Roller, use jig nos. ⑤ and ⑥.
- When adjusting the position of the PC Drum Paper Separator Fingers, use jig nos. ⑦ and ⑧.
- For the Predrive Inhibit Switch Actuating Jig ②, use the Interlock Switch Actuating Jig provided for EP3170.
- The numbers given together with the illustrations below are the jig part numbers. A kit number is assigned to each of the Front Door Interlock Switch Actuating Jig ①, Scanner/Mirrors Carriage Positioning Jig ④, and Sleeve/Magnet Roller Positioning Jig ⑤. These jigs are supplied only as a kit and are not available as individual parts.

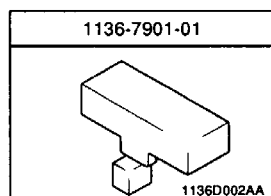
① Front Door Interlock Switch Actuating Jig



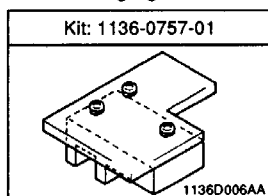
② Predrive Inhibit Switch Actuating Jig



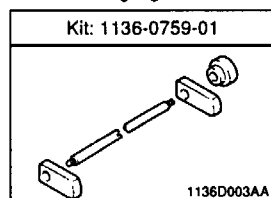
③ Scanner Positioning Jig



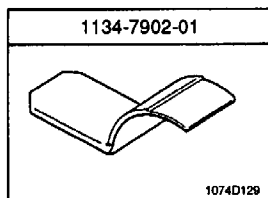
④ Scanner/Mirrors Carriage Positioning Jig



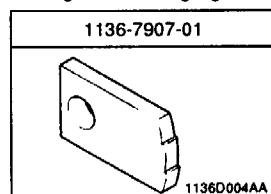
⑤ Sleeve/Magnet Roller Positioning Jig



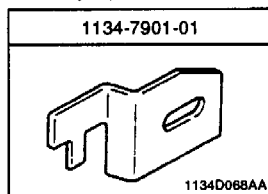
⑥ D.B. Adjusting Jig



⑦ PC Drum Paper Separator Finger Positioning Jig



⑧ Scanner Drive Pulley Fixing Jig



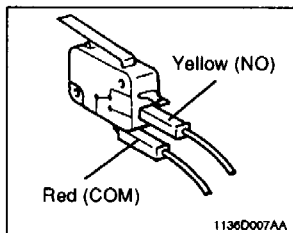
3-2. ADJUSTMENT REQUIREMENTS LIST

Adjustment Item	Requirements	Adjusting Point	Ref. Page
Optimum exposure in the Manual Exposure mode	Kodak Gray Scale: no image of the 1st step, faint image of the 2nd step	Control panel	D-78
Crosswise zoom ratio, full size	($\times 1.000$) 200 \pm 1.0 mm	Control panel	D-80
Feeding direction zoom ratio, full size	($\times 1.000$) 300 \pm 1.5 mm	Control panel	D-82
Multi Bypass Table reference position	($\times 1.000$) 20 \pm 2.0 mm	Multi Bypass Table	D-84
1st Drawer reference position	($\times 1.000$) 20 \pm 2.0 mm	Drawer Positioning Plate	D-85
2nd Drawer reference position	($\times 1.000$) 20 \pm 2.0 mm	Drawer Positioning Plate	D-85
Leading edge registration, full size	($\times 1.000$) 20 \pm 1.5 mm	Control panel	D-86
Leading edge registration, enlargement	($\times 2.000$) 40 \pm 3.0 mm	Control panel	D-88
Leading edge registration, reduction	($\times 0.500$) 10 \pm 1.5 mm	Control panel	D-90
Leading edge registration, book second page	($\times 1.000$) 20 \pm 3.0 mm	Control panel	D-92
Image leading edge erase width	($\times 1.000$) 1~6.5 mm	Control panel	D-94
Image trailing edge erase width	($\times 1.000$) 0.5~5.5 mm	Control panel	D-96
Edge erase	($\times 1.000$) 0.5~3.0 mm	Edge Erase Adjusting Screw	D-98

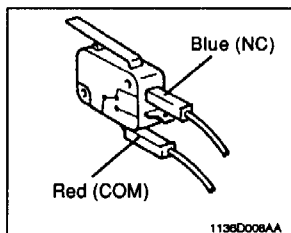
3-3. ADJUSTMENT OF SWITCHES

Microswitches

The following microswitches are used in various parts of this copier.



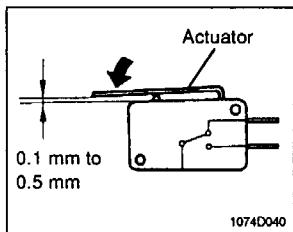
Wiring for the NO Type



Wiring for the NC Type

- NC (Normally-Closed) : Current flows between NC and COM when the actuator is open.
- NC (Normally-Open) : Current flows between NO and COM when the actuator is closed.
- COM (Common) : Common contact for NC and NO.

Requirement

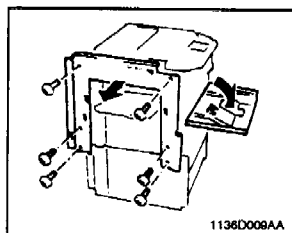


The gap between the switch and actuator should be 0.1 to 0.5 mm when the actuator is closed.

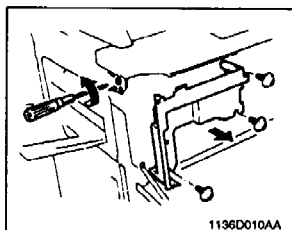
Out-of-Adjustment (When the actuator is closed)

- If the gap between the switch and actuator is too big, current does not at times flow to NC or NO.
- If there is no gap between the switch and actuator, the actuator is bent or the switch can be broken.

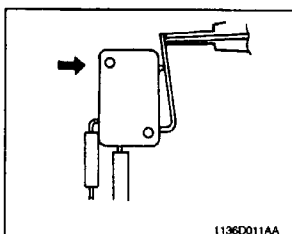
Adjustment of Front Door Interlock Switch S21



1. Swing down the Front Door.
2. Remove six screws and Upper Left Cover.



3. Remove three screws and the cover.
4. Loosen two screws that secure Front Door Interlock Switch.



5. Close the Front Door.
6. Slowly move the switch to the front until the actuator is closed by the actuator stop on the Front Door. Then, tighten the two mounting screws.

• The switch is wired for the NO type.

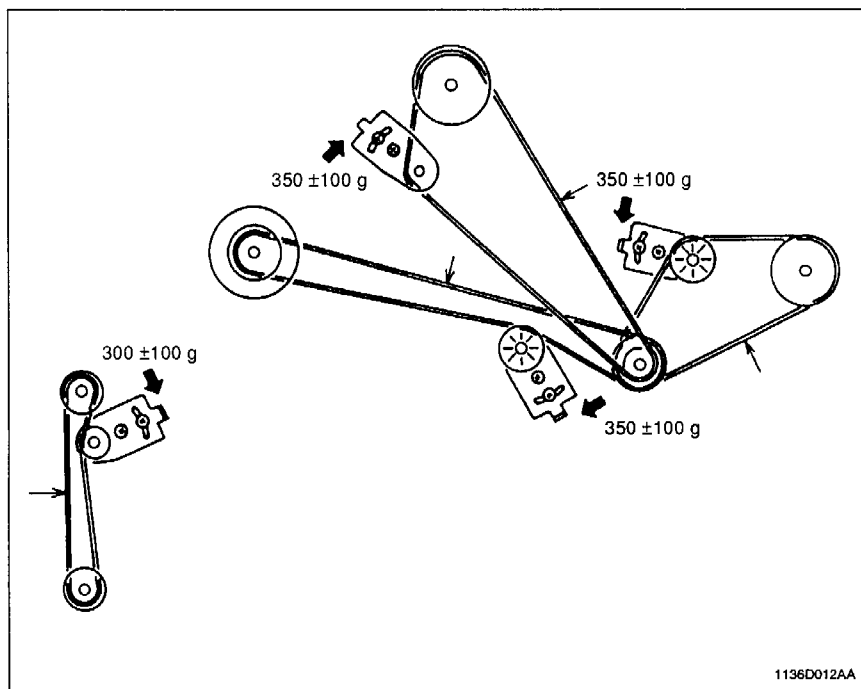
3-4. ADJUSTMENT OF BELT TENSION

◆Important

- Make sure that all gears are in positive mesh with each other and the belts snugly fit in the pulley grooves.
- Each belt should flex a little when finger-pressed down on the location indicated by the arrow.

	Belt	Tension	Deflection (Reference only)
(1)	Paper Take-Up Unit Timing Belt	300 ± 100 g	Approx. 3 mm
(2)	Developing Unit Timing Belt	350 ± 100 g	Approx. 4 mm
(3)	Fusing Unit Timing Belt	350 ± 100 g	Approx. 3 mm
(4)	PC Unit Timing Belt	350 ± 100 g	Approx. 5 mm

1. Loosen two screws that hold the Tension Lever. Press the Tension Lever in the direction of the arrow. When belt tension is correct, tighten the two screws.

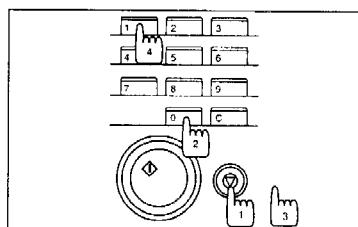


3-5. ACCESSING THE TECH. REP. MODE AND ADJUST MODE

◆Accessing the Tech. Rep. Mode

To access the Tech. Rep. mode, press the following keys in that order.

Stop Key → "0" of 10-Key Pad → Stop Key → "1" of 10-Key Pad



1134D069AA

Press the keys in order of [1], [2], [3], and [4].

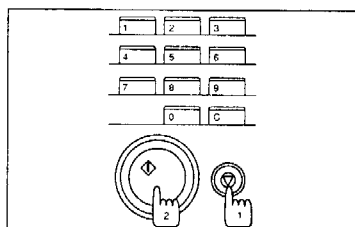
Tech. Rep. Mode Menu	
Function	ROM Version
Tech. Rep. Choice	RD Mode
System Input	ADF Check
Counter	Level History
I/O Check	Machine status
Last Trouble	Admin. Mode

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◆Accessing the Adjust Mode

To access the Adjust mode, press the following keys in that order with the Tech. Rep. mode menu on the screen.

Stop Key → Start Key



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Press the keys in order of [1] and [2].

Adjust	Enter												
Adjust 1/2													
<table border="1"> <thead> <tr> <th>AD Lens Focus</th> <th>50</th> </tr> </thead> <tbody> <tr> <td>A1 Lens Full Size Position</td> <td>50</td> </tr> <tr> <td>A2 Mirror Full Size Position</td> <td>50</td> </tr> <tr> <td>A3 Feed Direction Mag. Ratio</td> <td>50</td> </tr> <tr> <td>A4 Lens Position Full Size</td> <td>50</td> </tr> <tr> <td>A5 Lens Position Reduction</td> <td>50</td> </tr> </tbody> </table>		AD Lens Focus	50	A1 Lens Full Size Position	50	A2 Mirror Full Size Position	50	A3 Feed Direction Mag. Ratio	50	A4 Lens Position Full Size	50	A5 Lens Position Reduction	50
AD Lens Focus	50												
A1 Lens Full Size Position	50												
A2 Mirror Full Size Position	50												
A3 Feed Direction Mag. Ratio	50												
A4 Lens Position Full Size	50												
A5 Lens Position Reduction	50												
49-51													
<div> <div>▼</div> <div>▲</div> </div> <div> <div>◀</div> <div>▶</div> </div>	Next												

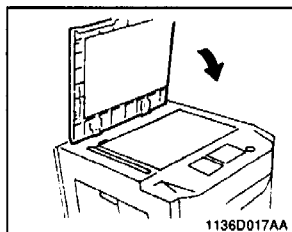
1134D148CA

3-6. ELECTRICAL/IMAGE ADJUSTMENTS

(1) Initial Adjustment of Original Size Detecting Board

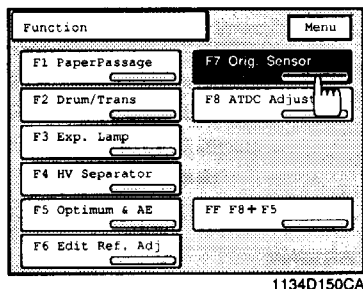
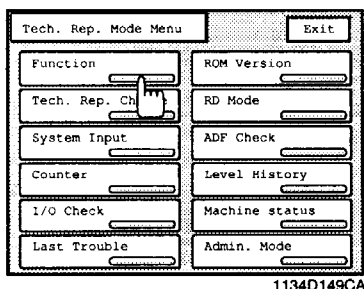
◆ Important

- The following adjustment must be made when memory has been cleared, RAM Board PWB-R or Original Size Detecting Board UN2 replaced, or an Original Size Detecting Sensor replaced or added.



1. Lower the Original Cover with no original placed on the Original Glass.

2. Call the Tech. Rep. mode menu to the screen.
3. Touch [Function] to show the Function menu on the screen.
4. Touch [F7 Orig. Sensor].
5. Press the Start Key to let the copier make the initial adjustment of the Original Size Detecting Board.



NOTE

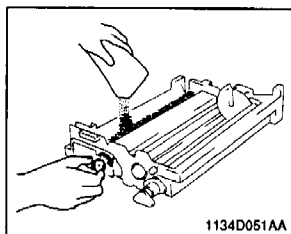
While the copier is in the adjustment cycle, the Start Key is lit up orange. The key turns green as soon as the adjustment cycle is completed.

6. After the adjustment has been made, press the Panel Reset Key to return the copier to the normal operating state.

(2) ATDC Adjustment

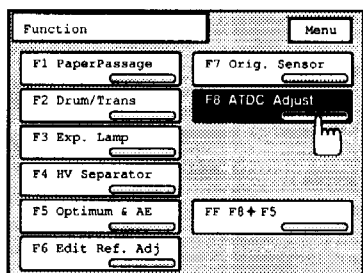
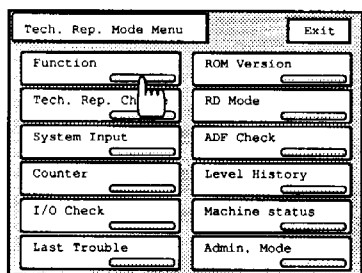
◆Important

Make this adjustment only after the starter has been replaced.



1. Load the PC Unit with fresh starter.
2. Reinstall the PC Unit in the copier.

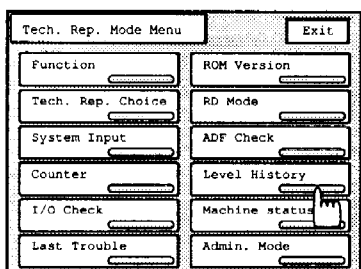
3. Call the Tech. Rep. mode menu to the screen.
4. Touch [Function] to show the Function menu on the screen.
5. Touch [F8 ATDC Adjust].
6. Press the Start Key to let the copier make the ATDC adjustment. (It will run for about 3 minutes.)



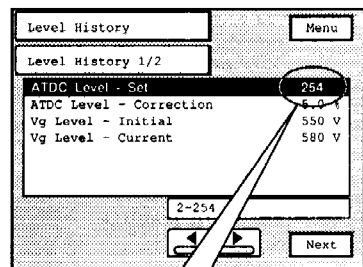
NOTES

- While the copier is in the adjustment cycle, the Start Key is lit up orange. The key turns green as soon as the adjustment cycle is completed.
- The press of the Start Key will automatically start the ATDC adjustment cycle. Be sure to run this cycle only after the starter has been replaced.

6. Touch [Menu] on the screen to show the Tech. Rep. mode menu again.
7. Touch [Level History] and enter the value for the "ATDC Set Level" on the Adjust Label affixed inside the Front Door.
8. Then, press the Panel Reset Key to return the copier to the normal operating state.

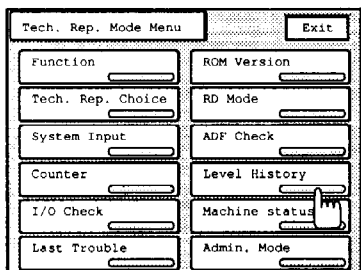


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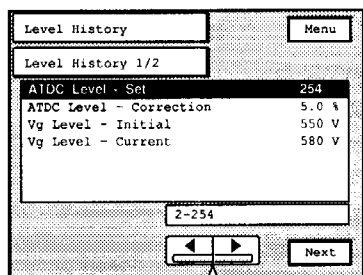


1134D194CB

- ◆ Should the F8 operation be run when the starter has not been replaced, check that the "ATDC Set Level" value on the "Level History" screen matches that written on the Adjust Label. If they do not agree with each other, change the "ATDC Set Level" value on the screen so that it matches the value on the Adjust Label.



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Touch the shift key (◀) or (▶) to change the value and touch [Menu] to validate the new setting.

(3) Adjustment of the Aperture Plates

◆Requirement

- There should be no dark or light bands running in the feeding direction on the copy produced.

◆Important

- If dark or light bands running in the feeding direction occur on the copies, first make the following checks before starting the adjustment procedure.
 - 1) The PC Drum Charge Corona wire, grid mesh, and the Image Transfer Corona wire are all free of dirt.
 - 2) The surfaces of the Mirrors and Lens are free of dirt.
 - 3) The surfaces of the Exposure Lamp and Main Erase Lamp are free of scratches and dirt.
 - 4) The Cleaning Blade has not decayed or hardened or is not wavy.

1. Make a copy under the following control panel settings.

Original: A3 or A4 crosswise,

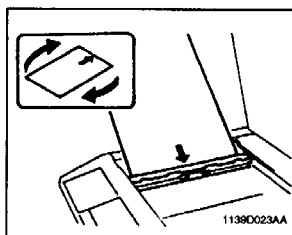
11" x 17" or 11" x 8-1/2" crosswise

Paper: A3 or A4 crosswise,

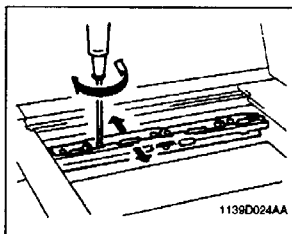
11" x 17" or 11" x 8-1/2" crosswise

Zoom ratio: 100%

Exposure: Manual (setting convenient for the check)



2. Remove the Original Glass.
3. Turn the copy on the Exit Tray around as shown to reverse the leading and trailing edges and align it with the Aperture Plates.



4. Adjust to obtain the center image density for all areas of the copy.

NOTE

To make the image darker, move the Aperture Plates toward the Auxiliary Reflector.

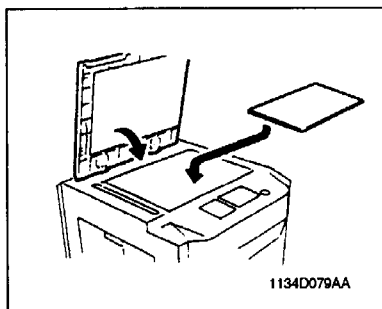
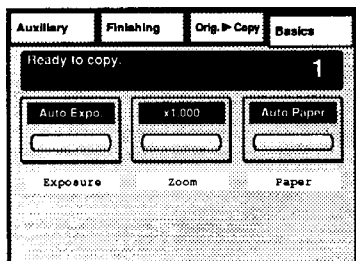
To make the image lighter, move the Aperture Plates away from the Auxiliary Reflector.

(4) Adjustment of Exposure Level in the Auto Exposure Mode

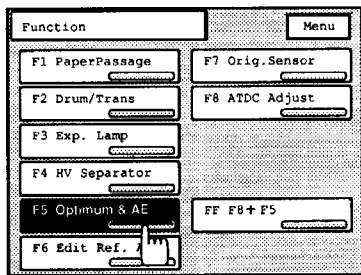
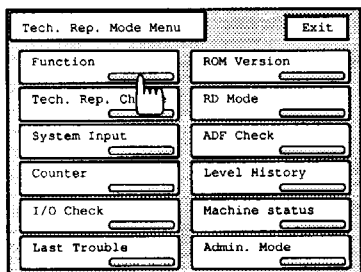
◆Important

- Before starting the procedure, check that the Auto Exposure mode is selected on the Touch Panel.
- For the adjustment, place about five blank sheets of A3 or 11" × 17" paper one on top of the other on the Original Glass and lower the Original Cover.
- After this adjustment, be sure to check the optimum exposure setting in the Manual Exposure mode.

1. Make sure that the Auto Exposure mode is selected on the Touch Panel. Then, place about five blank sheets of A3, or 11" × 17", paper one on top of the other on the Original Glass and lower the Original Cover.



2. Call the Tech. Rep. mode menu to the screen.
3. Touch [Function] to show the Function menu on the screen.
4. Touch [F5 Optimum & AE].
5. Press the Start Key to let the copier adjust the exposure level in the Auto Exposure mode. (It will run for about 30 seconds.)



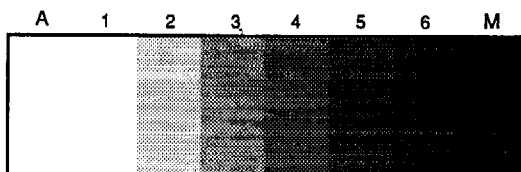
While the copier is in the adjustment cycle, the Start Key is lit up orange. The key turns green as soon as the adjustment cycle is completed.

6. After the adjustment, touch [Menu] to return the copier to the normal operating state.
7. Check the optimum exposure setting in the Manual Exposure mode. (See p. D-75.)

(5) Adjustment of Optimum Exposure Setting in the Manual Exposure Mode

◆Requirement

- Exposure Lamp voltage setting range in the Manual Exposure mode ... 44 to 56
- When the manual exposure setting is at the central indication, no image of step no. 1 of a Kodak Gray Scale should be produced on the copy, but a faint image of step no. 2 should be produced.

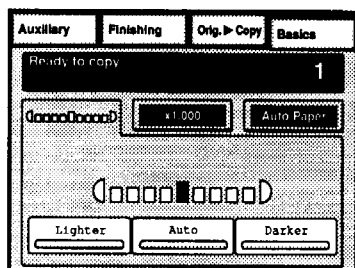


1136D300AA

◆Important

This adjustment should be made only after completing the "Adjustment of Exposure Level in the Auto Exposure Mode" and "Adjustment of the Aperture Plates."

* If the setting has been changed in this adjustment, be sure to make the "adjustment of exposure level in the Auto Exposure mode."



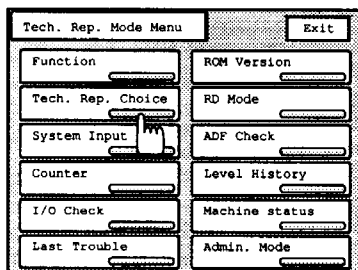
1134D198CA

- Place the Kodak Gray Scale lengthwise, face down, and at the center on the Original Glass. Place a sheet of pure white A3 or 11" x 17" paper over it and then lower the Original Cover.
- Set the copier into the Manual Exposure mode and set the exposure setting to the central or fifth indication (EXP5). Make about 15 copies using A3 or 11" x 17" paper (so that the PC Drum sensitivity stabilizes). Then, check that the 15th copy meets the requirement given above.

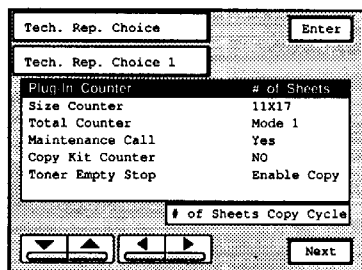
* If the image density is outside the specifications, make the following adjustment.

3. Call the Tech. Rep. mode menu to the screen.

4. Touch [Tech. Rep. Choice] to show the "Tech. Rep. Choice 1" menu on the screen.



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1134D160CA

5. Touch [Next] twice to show the "Tech. Rep. Choice 3" menu on the screen.
6. Observing the image density of the sample copy, touch the shift key [◀] or [▶] to change the setting for "Exp. Lamp Manual Adj."
7. Touch [Enter] to validate the setting.
8. Run the F5 operation again.

Setting Instructions

- If the image density is low, decrease the setting value.
 - If the image density is high, increase the setting value.
- * If the image density does not fall within the specifications through one setting, try another setting.

Tech. Rep. Choice 1

	# of Sheets
Plug-In Counter	11X17
Size Counter	Mode 1
Total Counter	Yes
Maintenance Call	NO
Copy Kit Counter	Enable Copy
Toner Empty Stop	

of Sheets Copy Cycle

Next

1134D161CA

Touch This Key Twice.

Tech. Rep. Choice 3

Exp. Lamp Manual Adj.	50
ATDC T/C Ratio	51

47-54	

1134D162CA

Touch This Key if ID is High.

Touch This Key if ID is Low.

NOTE

Be sure to touch [Enter] before pressing the Panel Reset Key to return the copier to the normal operating state. If this is not done, the old setting remains valid.

(6) Adjustment of Zoom Ratio in the Crosswise Direction ("Adjust A1 = Lens Full Size Position")

◆Requirement

- This adjustment is made for the zoom ratio in the crosswise direction.
- A scale is placed on the Original Glass to run parallel with the Scanner and the length of the scale on the copy is compared with that of the actual scale. The adjustment must be made so that the difference between the two dimensions falls within the following specifications.

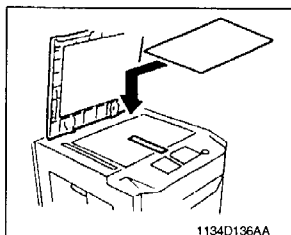
The difference should be within $\pm 0.5\%$ of the actual length.

Against 200 mm, allowance is $200 \text{ mm} \times 0.005 = 1.0 \text{ mm}$.

Zoom Ratio	Specifications	Adjusting Mode	Setting Range
Full size (x1.000)	$200 \pm 1.0 \text{ mm}$	Adjust A1 = Lens Full Size Position	43 to 58

◆Important

This adjustment must be made before the "Reference Position Adjustments."

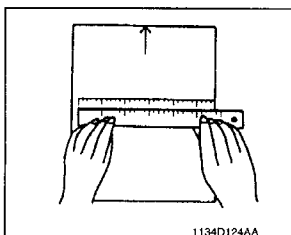


1. Place a scale in parallel with the Original Width Scale and make a copy.

* Use the full size (x1.000) mode and

200-mm-or-wider paper.

* If the scale is of plastic and transparent, place a blank sheet of paper on it.



2. Allow the copy to stand for 3 minutes, then measure the length to determine the zoom ratio in the crosswise direction.

Using the scale, measure the length of the scale on the copy to find any difference.

* If the zoom ratio deviates from the specifications, go to the next step.

3. Call the "Adjust 1/2" menu to the screen.
4. Touch the select key [▼] or [▲] to highlight "A1 Lens Full Size Position."

Adjust 1/2

A0 Lens Focus	50
A1 Lens Full Size Position	50
A2 Mirror Full Size Position	50
A3 Feed Direction Mag. Ratio	50
A4 Lens Position Full Size	50
A5 Lens Position Reduction	50

49-51

Next

1134D163CA

Adjust 1/2

A0 Lens Focus	50
A1 Lens Full Size Position	50
A2 Mirror Full Size Position	50
A3 Feed Direction Mag. Ratio	50
A4 Lens Position Full Size	50
A5 Lens Position Reduction	50

43-58

Next

1134D164CA

5. Touch the shift key [◀] or [▶] to change the set value.
6. Touch [Enter] to validate the setting.

Setting Instructions

- If the scale on the copy is longer than the actual scale, decrease the setting value.
- If the scale on the copy is shorter than the actual scale, increase the setting value.

* If the measurement does not fall within the specifications through one setting, try another setting.

Adjust 1/2

A0 Lens Focus	50
A1 Lens Full Size Position	50
A2 Mirror Full Size Position	50
A3 Feed Direction Mag. Ratio	50
A4 Lens Position Full Size	50
A5 Lens Position Reduction	50

43-58

Next

1134D165CA

Setting Value

Touch This Key if Measurement is Shorter.

Touch This Key if Measurement is Longer.

NOTE

Be sure to touch [Enter] before pressing the Panel Reset Key to return the copier to the normal operating state. If this is not done, the old setting remains valid.

(7) Adjustment of Zoom Ratio in the Feeding Direction ("Adjust A3 = Feed Direction Mag. Ratio")

◆Requirement

- This adjustment is made for the zoom ratio in the feeding direction.
- A scale is placed on the Original Glass perpendicularly to the Scanner and the length of the scale on the copy is compared with that of the actual scale. The adjustment must be made so that the difference between the two dimensions falls within the following specifications.

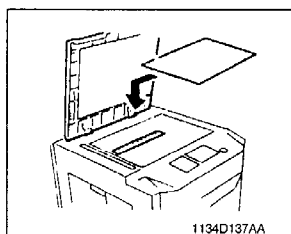
The difference should be within $\pm 0.5\%$ of the actual length.

Against 300 mm, allowance is $300 \text{ mm} \times 0.005 = 1.5 \text{ mm}$.

Zoom Ratio	Specifications	Adjusting Mode	Setting Range
Full size ($\times 1.000$)	$300 \pm 1.5 \text{ mm}$	Adjust A3 = Feed Direction Mag. Ratio	46 to 54

◆Important

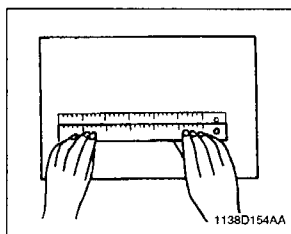
This adjustment must be made before the "Reference Position Adjustments."



1. Place a scale in parallel with the Original Length Scale and make a copy.

* Use the full size ($\times 1.000$) mode and A3 or 11" \times 17" paper.

* If the scale is of plastic and transparent, place a blank sheet of paper on it.



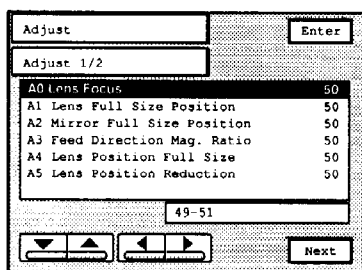
2. Allow the copy to stand for 3 minutes, then measure the length to determine the zoom ratio in the feeding direction.

Using the scale, measure the length of the scale on the copy to find any difference.

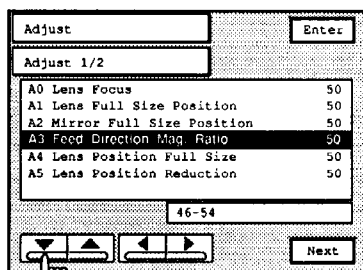
* If the zoom ratio deviates from the specifications, go to the next step.

3. Call the "Adjust 1/2" menu to the screen.

4. Touch the select key [▼] or [▲] to highlight "A3 Feed Direction Mag. Ratio."



1134D168CA



1134D167CA

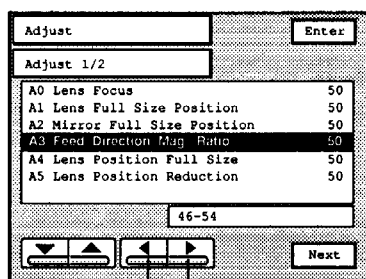
5. Touch the shift key [◀] or [▶] to change the set value.

6. Touch [Enter] to validate the setting.

Setting Instructions

- If the scale on the copy is longer than the actual scale, decrease the setting value.
- If the scale on the copy is shorter than the actual scale, increase the setting value.

* If the measurement does not fall within the specifications through one setting, try another setting.



1134D168CA

Touch This Key if Measurement is Shorter.

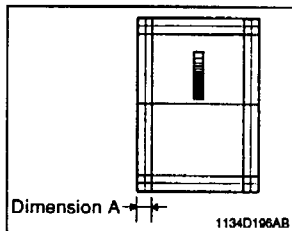
Touch This Key if Measurement is Longer.

NOTE

Be sure to touch [Enter] before pressing the Panel Reset Key to return the copier to the normal operating state. If this is not done, the old setting remains valid.

(8) Adjustment of Reference Position of the Multi Bypass Table

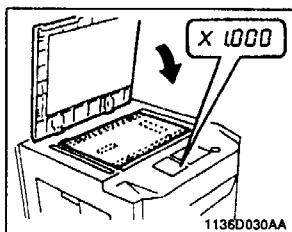
◆Requirement



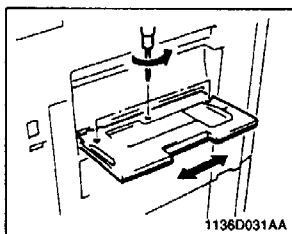
- Dimension A on the copy of the GTC-test chart should measure 20 mm \pm 2.0 mm in the full size (x1.000) mode.

◆Important

This adjustment should be made after the "adjustment of zoom ratio in the crosswise direction."



1. Place the GTC-test chart face down on the Original Glass and align its rear left corner with the reference marker on the Original Width Scale on the left side of the platen. Then, lower the Original Cover.
2. Feeding a sheet of A3 or 11" x 17" paper through the Multi Bypass Table, make one full-size copy.
3. Check if dimension A (from the edge up to the reference line) on the copy is up to the specifications.



4. If dimension A deviates from the specifications, loosen three screws that secure the Multi Bypass Table and move the table in the direction of the arrow as necessary.

Adjusting Instructions

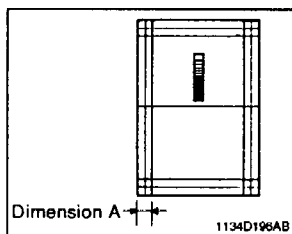
- If dimension A on the copy is shorter than 18 mm, move the table to the front of the copier.
- If dimension A on the copy is longer than 22 mm, move the table to the rear of the copier.

NOTE

When a Duplexing Document Feeder is mounted, it involves changing the Original Glass. This in turn results in the position of the Original Length Scale being slightly shifted to the rear. This can nonetheless be corrected with the Original Positioning Plate.

(9) Adjustment of Reference Position of the 1st/2nd Drawer

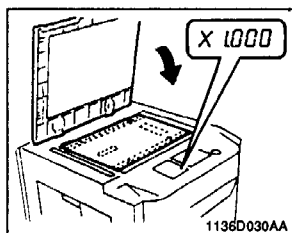
◆Requirement



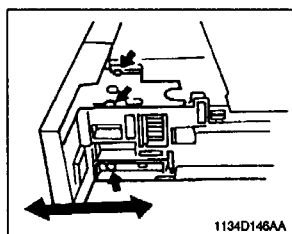
- Dimension A on the copy of the GTC-test chart should measure 20 mm \pm 2.0 mm in the full size ($\times 1.000$) mode.

◆Important

This adjustment should be made after the "adjustment of zoom ratio in the crosswise direction."



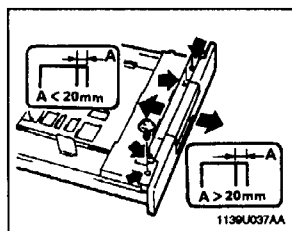
1. Place the GTC-test chart face down on the Original Glass and align its rear left corner with the reference marker on the Original Width Scale on the left side of the platen. Then, lower the Original Cover.
2. Feeding two sheets of A3 or 11" \times 17" paper from the 1st Drawer, make two full-size copies.
3. Check if dimension A (from the edge up to the reference line) on the second copy is up to the specifications.



4. If dimension A deviates from the specifications, slide out the 1st Drawer. Then, loosen the three screws shown on the left and move the Drawer Positioning Plate to the front or rear as necessary. (Use the same procedure for the 2nd Drawer.)

Adjusting Instructions

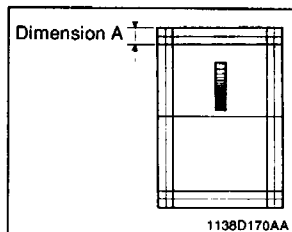
- If dimension A on the copy is longer than 22 mm, move the Positioning Plate to the front of the copier.
- If dimension A on the copy is shorter than 18 mm, move the Positioning Plate to the rear of the copier.



5. After the adjustment, loosen the four screws shown on the left and adjust the position (tilt) of the Drawer Cover.

(10) Adjustment of the Leading Edge Registration (Registration Adjustments Using Adjust Mode)

◆Requirement



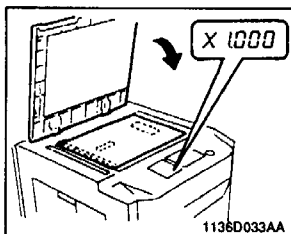
- Dimension A on the copy of the GTC-test chart should measure as follows at the respective zoom ratios.

Zoom Ratio	Specifications	Adjustment Mode	Setting Range
Full size (×1.000)	20 ±1.5 mm	Adjust A4 = Lens Position Full Size	40 to 60
Enlargement (×2.000)	40 ±3.0 mm	Adjust A11 = Lens Position Enlargement	
Reduction (×0.500)	10 ±1.5 mm	Adjust A5 = Lens Position Reduction	

◆Important

This adjustment should be made after the "adjustment of zoom ratio in the feeding direction."

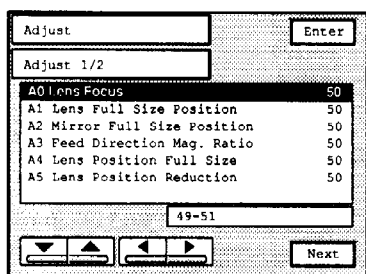
(1) Leading Edge Registration in Full Size Mode



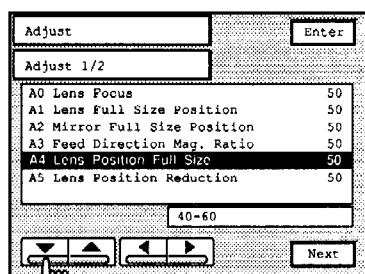
1. Place the GTC-test chart face down on the Original Glass and align its rear left corner with the reference marker on the Original Width Scale on the left side of the platen. Then, lower the Original Cover.
2. Make two single copies on A3 or 11" × 17" paper in full size mode and check the second copy for leading edge registration.

(If the registration is up to the specifications, go to the adjustment in the enlargement mode. If it deviates from the specifications, perform the following steps to make the adjustment of leading edge registration in the full size mode.)

3. Call the "Adjust 1/2" menu to the screen.
4. Touch the select key [▼] or [▲] to highlight "A4 Lens Position Full Size."



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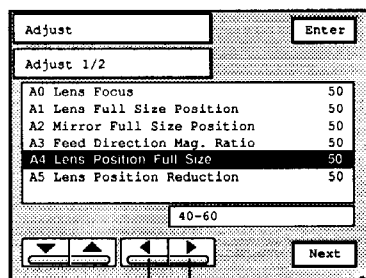
1134D170CA

5. Touch the shift key [◀] or [▶] to change the setting value.
6. Touch [Enter] to validate the setting.

Setting Instructions

- If dimension A on the copy is longer than 21.5 mm, increase the setting value.
- If dimension A on the copy is shorter than 18.5 mm, decrease the setting value.

* If the measurement does not fall within the specifications through one setting, try another setting.



1134D171CA

Touch This Key if Measurement is Longer.

Touch This Key if Measurement is Shorter.

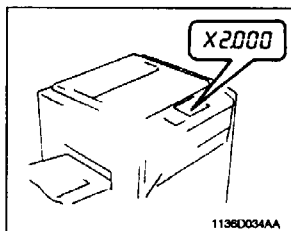
NOTE

Be sure to touch [Enter] before pressing the Panel Reset Key to return the copier to the normal operating state. If this is not done, the old setting remains valid.

(2) Leading Edge Registration in Enlargement Mode

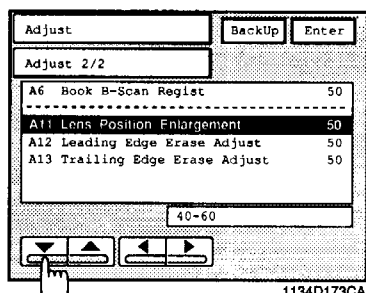
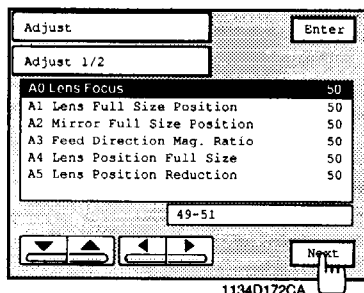
◆Important

This adjustment should be made after the "adjustment of leading edge registration in the full size mode."



1. After the leading edge registration in the full size mode has been adjusted, make two single copies on A3 or 11" x 17" paper at x2.000 and check the second copy for leading edge registration.
(If the registration is up to the specifications, go to the adjustment in the reduction mode. If it deviates from the specifications, perform the following steps to make the adjustment of leading edge registration in the enlargement mode.)

2. With the "Adjust 1/2" menu on the screen, touch [Next] to show the "Adjust 2/2" menu.
3. Touch the select key [▼] or [▲] to highlight "A11 Lens Position Enlargement."

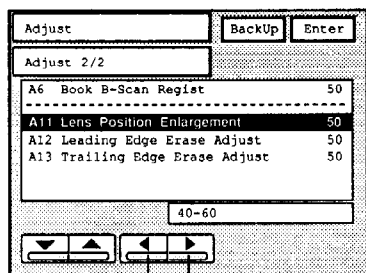


4. Touch the shift key [◀] or [▶] to change the setting value.
5. Touch [Enter] to validate the setting.

Setting Instructions

- If dimension A on the copy is longer than 43.0 mm, increase the setting value.
- If dimension A on the copy is shorter than 37.0 mm, decrease the setting value.

* If the measurement does not fall within the specifications through one setting, try another setting.



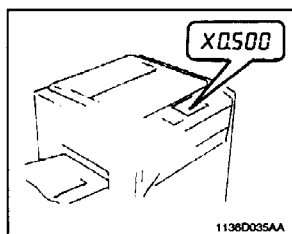
Touch This Key if Measurement is Longer.

Touch This Key if Measurement is Shorter.

NOTE

Be sure to touch [Enter] before pressing the Panel Reset Key to return the copier to the normal operating state. If this is not done, the old setting remains valid.

(3) Leading Edge Registration in Reduction Mode



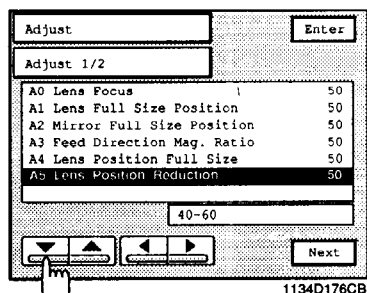
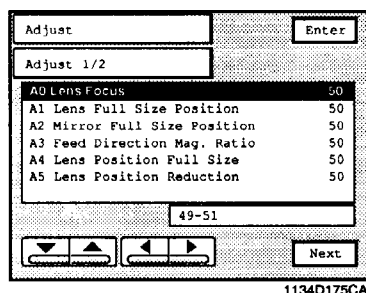
1. After the leading edge registration in the enlargement mode has been adjusted, make two single copies on A3 or 11" x 17" paper at x0.500 and check the second copy for leading edge registration.

(If the registration deviates from the specifications, perform the following steps to make the adjustment of leading edge registration in the reduction mode.)

◆Important

This adjustment should be made after the "adjustment of leading edge registration in the full size mode."

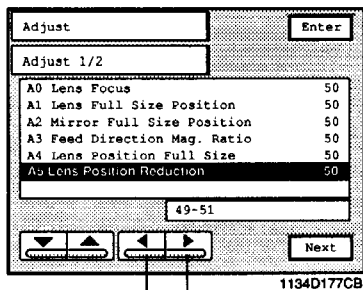
2. Call the "Adjust 1/2" menu to the screen.
3. Touch the select key [▼] or [▲] to highlight "A5 Lens Position Reduction."



4. Touch the shift key [◀] or [▶] to change the setting value.
5. Touch [Enter] to validate the setting.

Setting Instructions

- If dimension A on the copy is longer than 11.5 mm, increase the setting value.
 - If dimension A on the copy is shorter than 8.5 mm, decrease the setting value.
- * If the measurement does not fall within the specifications through one setting, try another setting.



Touch This Key if Measurement is Longer.

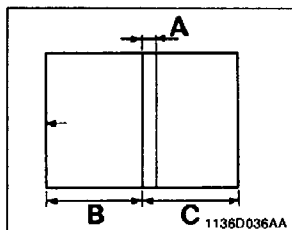
Touch This Key if Measurement is Shorter.

NOTE

Be sure to touch [Enter] before pressing the Panel Reset Key to return the copier to the normal operating state. If this is not done, the old setting remains valid.

(11) Adjustment of the Leading Edge Registration for Book Second Page

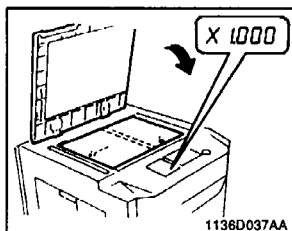
◆Requirement



- Dimension A on the copy of a test chart (A3 or 11" × 17") as shown on the left should measure 20 ± 3.0 mm and B equals C.
- Setting range: 45 to 55

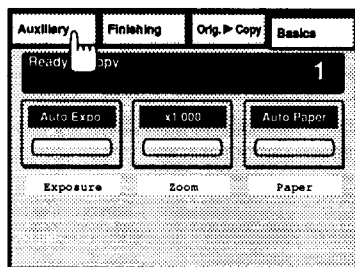
◆Important

This adjustment should be made after the "adjustment of the leading edge registration."

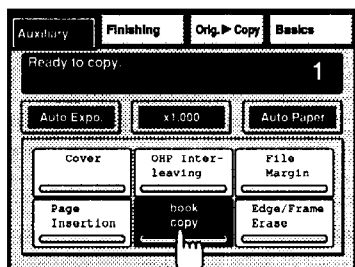


1. Place the test chart face down on the Original Glass and align its rear left corner with the reference marker on the Original Width Scale on the left side of the platen. Then, lower the Original Cover.

2. On the Basic screen, touch [Auxiliary]. Then, on the Auxiliary function menu screen, touch [Book Copy] to set the copier into the Book mode.

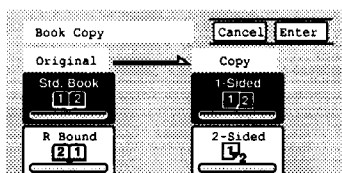


1134D188CB



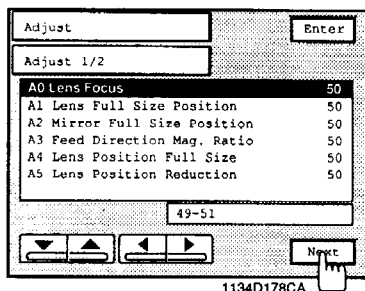
1134D189CB

3. Select the [1-Sided] Copy and make two single copies on A4 crosswise paper. Check the second copy for the leading edge registration of the second page. (If the dimension deviates from the specifications, perform the following steps to make the adjustment of leading edge registration for the second page.)

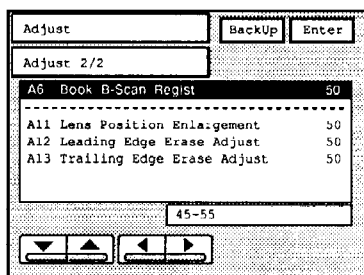


1134P299CB

4. With the "Adjust 1/2" menu on the screen, touch [Next] to show the "Adjust 2/2" menu. Then, highlight "A6 Book B-Scan Regist."



1134D178CA



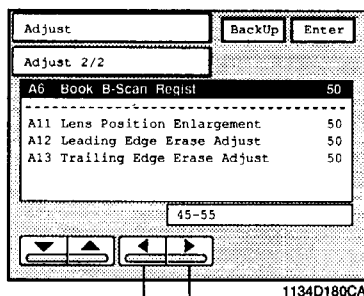
1134D179CA

5. Touch the shift key [◀] or [▶] to change the setting value.
6. Touch [Enter] to validate the setting.

Setting Instructions

- If dimension A on the copy is longer than 23 mm, increase the setting value.
- If dimension A on the copy is shorter than 17 mm, decrease the setting value.

** If the measurement does not fall within the specifications through one setting, try another setting.*



1134D180CA

Touch This Key if Measurement is Longer.

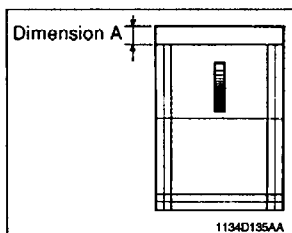
Touch This Key if Measurement is Shorter.

NOTE

Be sure to touch [Enter] before pressing the Panel Reset Key to return the copier to the normal operating state. If this is not done, the old setting remains valid.

(12) Adjustment of the Image Leading Edge Erase Width

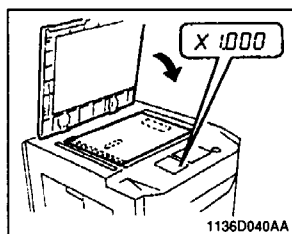
◆Requirement



- The erase width, dimension A, on the copy of the GTC-test chart should measure 1.0 to 6.5 mm.
- Setting range: 45 to 55

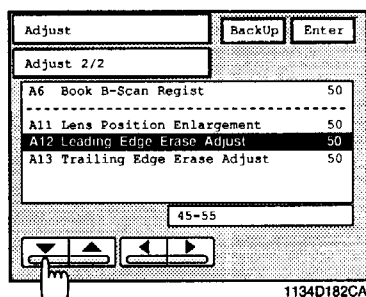
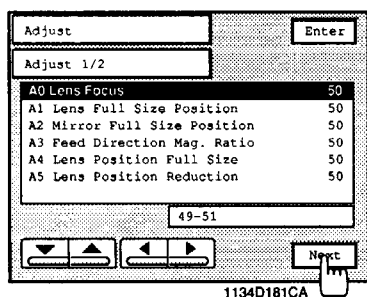
◆Important

This adjustment should be made after the "adjustment of the leading edge registration" and "adjustment of the leading edge registration for book second page."



1. Place the GTC-test chart face down on the Original Glass and align its rear left corner with the reference marker on the Original Width Scale on the left side of the platen. Then, lower the Original Cover.
2. Make two single copies on A3 or 11" × 17" paper in full size mode and check the second copy for leading edge erase width.
(If the erase width deviates from the specifications, perform the following steps to make the adjustment of image leading edge erase width.)

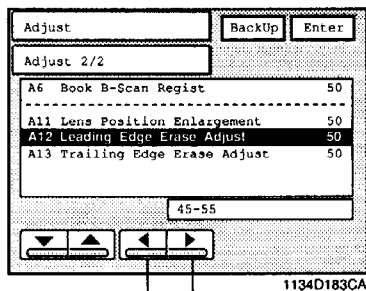
3. With the "Adjust 1/2" menu on the screen, touch [Next] to show the "Adjust 2/2" menu.
4. Touch the select key [▼] or [▲] to highlight "A12 Leading Edge Erase Adjust."



5. Touch the shift key [◀] or [▶] to change the setting value.
6. Touch [Enter] to validate the setting.

Setting Instructions

- If dimension A on the copy is longer than 6.5 mm, decrease the setting value.
 - If dimension A on the copy is shorter than 1.0 mm, increase the setting value.
- * If the measurement does not fall within the specifications through one setting, try another setting.*

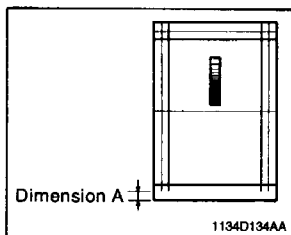


NOTE

Be sure to touch [Enter] before pressing the Panel Reset Key to return the copier to the normal operating state. If this is not done, the old setting remains valid.

(13) Adjustment of the Image Trailing Edge Erase Width

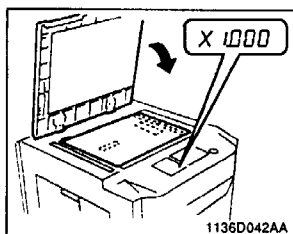
◆Requirement



- The erase width, dimension A, on the copy of the GTC-test chart should measure 0.5 to 5.5 mm.
- Setting range: 42 to 58

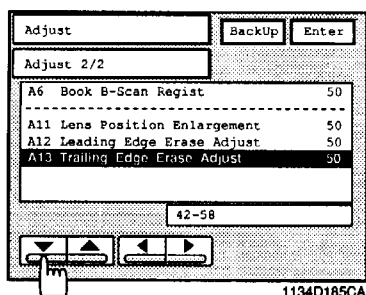
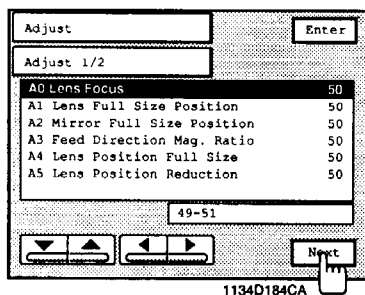
◆Important

- This adjustment should be made after the "adjustment of the image leading edge erase width."
- Before this adjustment can be made, "Trailing Edge Erase" on the "Tech. Rep. Choice 2" screen must be set to "Yes."



1. Place the GTC-test chart face down on the Original Glass and align its rear left corner with the reference marker on the Original Width Scale on the left side of the platen. Then, lower the Original Cover.
2. Make two single copies on A3 or 11" x 17" paper in full size mode and check the second copy for trailing edge erase width.
(If the erase width deviates from the specifications, perform the following steps to make the adjustment of image trailing edge erase width.)

3. With the "Adjust 1/2" menu on the screen, touch [Next] to show the "Adjust 2/2" menu.
4. Touch the select key [▼] or [▲] to highlight "A13 Trailing Edge Erase Adjust."



5. Touch the shift key [◀] or [▶] to change the setting value.
6. Touch [Enter] to validate the setting.

Setting Instructions

- If dimension A on the copy is longer than 5.5 mm, decrease the setting value.
 - If dimension A on the copy is shorter than 0.5 mm, increase the setting value.
- * If the measurement does not fall within the specifications through one setting, try another setting.*

1134D186CA

Touch This Key if Measurement is Shorter.

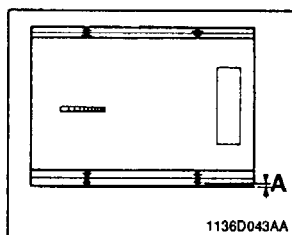
Touch This Key if Measurement is Longer.

NOTE

Be sure to touch [Enter] before pressing the Panel Reset Key to return the copier to the normal operating state. If this is not done, the old setting remains valid.

(14) Adjustment of Edge Erase

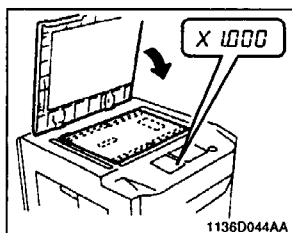
◆Requirement



- Dimension A, which is the erase width from the front edge on the copy of the GTC-test chart, should be in the range between 0.5 mm and 3.0 mm.

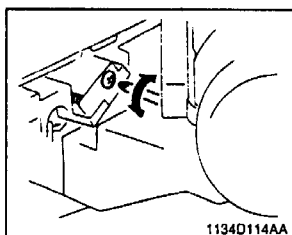
◆Important

This adjustment must be made after the "adjustments of reference positions."



1. Place the GTC-test chart face down on the Original Glass and align its rear left corner with the reference marker on the Original Width Scale on the left side of the platen. Then, lower the Original Cover.
2. Make a single copy on A3 or 11" x 17" paper in full size mode.

* If A3 or 11" x 17" paper is not available, use A4 or 8-1/2" x 11" crosswise paper.



3. If the front edge erase width deviates from the specifications, adjust as necessary by turning the Edge Erase Adjusting Screw.

Adjusting Instructions

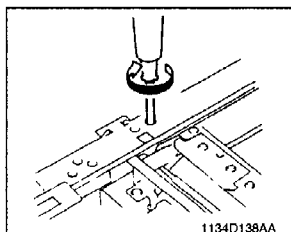
- If dimension A on the copy (of the original width of 3.0 mm) is narrower than 0.5 mm, tighten the Adjusting Screw.
- If dimension A on the copy (of the original width of 3.0 mm) is wider than 3.0 mm, loosen the Adjusting Screw.

3-7. OTHER ADJUSTMENTS

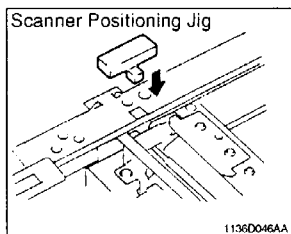
(1) Focus-Positioning of the Scanner and Mirrors Carriage

◆ Requirement

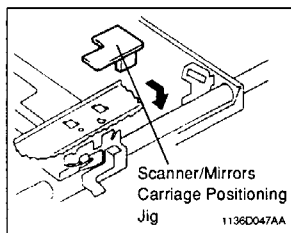
- With the Scanner positioned correctly with reference to the Scanner Drive Cable, there should be no gap between one end of the Scanner/Mirrors Carriage Positioning Jig and the Scanner, and between the other end of the jig and the Mirrors Carriage. The distance between the Scanner and Mirrors Carriage should be 83.5 mm.



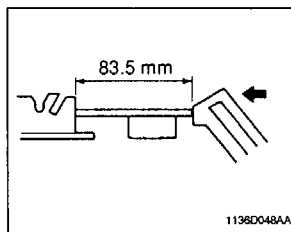
1. Remove the Original Cover, Upper Rear Cover, and Original Glass.
2. Slide the Scanner to a position at which the hole in the rear of the upper copier frame is aligned with the Scanner Positioning Screw.
3. Insert a screwdriver into the hole in the rear of the upper copier frame and loosen the Scanner Positioning Screw. (This allows the Scanner Drive Cable to move independently of the Scanner.)



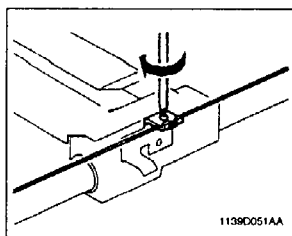
4. Align the rectangular hole in the upper copier frame with the U-groove in the Scanner. Insert the Scanner Positioning Jig.



5. Install the Scanner/Mirrors Carriage Positioning Jig between the Scanner and the Mirrors Carriage.



6. Move the Mirrors Carriage in the direction of the arrow.
7. Check that both ends of the Scanner/Mirrors Carriage Positioning Jig have no gap.

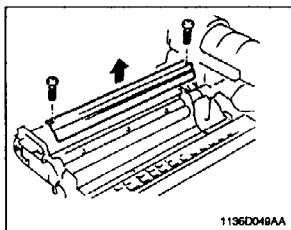


8. Tighten the Scanner Positioning Screw which has been loosened in step 3.

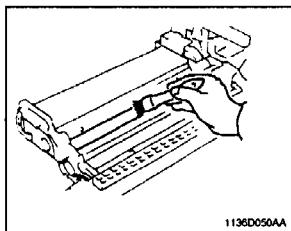
(2) Adjustment of the Gap Between the Doctor Blade and Sleeve Roller (D.B. Adjustment)

◆ Requirement

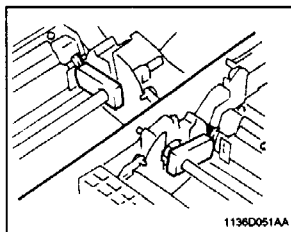
- The gap between the Doctor Blade and Sleeve Roller should be 0.53 ± 0.01 mm.



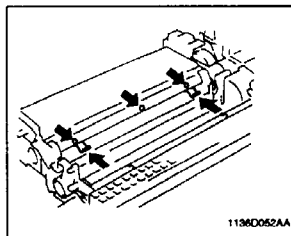
1. Remove the PC Unit, PC Drum Charge Corona, and PC Drum.
2. Remove two screws and the Developer Scattering Prevention Plate.



3. Using a brush, whisk developer off the surface of the Sleeve Roller.



4. Install the Sleeve/Magnet Roller Positioning Jig into the PC Unit.



5. Loosen three screws that secure the Doctor Blade. Insert the D.B. Adjusting Jigs between the Doctor Blade and Sleeve Roller.
6. Press down the Doctor Blade until it positively contacts the D.B. Adjusting Jigs. Then, tighten the three screws to secure the Doctor Blade.

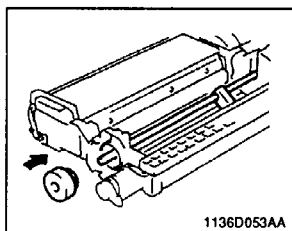
(3) Adjustment of the PC Drum Paper Separator Finger Position

◆ Requirement

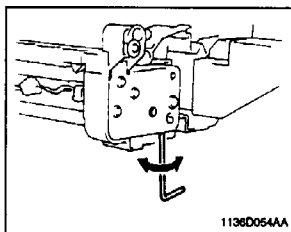
- The gap between the PC Drum and Paper Separator Fingers should be 1.0 ± 0.5 mm when Separator Solenoid SL5 is in the deenergized position.

◆ Important

- Use care not to deform the Separator Fingers during the adjustment procedure.



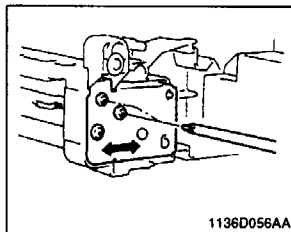
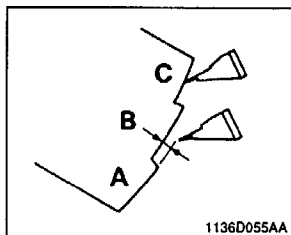
1. Attach the PC Drum Paper Separator Finger Positioning Jig to the PC Unit.



2. Using an Allen wrench, adjust the position of one of the two Paper Separator Fingers. (Either one will do.)

Adjusting Instructions

- With the solenoid in the deenergized position, the tip of the finger should be at a point between A and B, preferably more on the B end.
 - With the solenoid energized, the tip of the finger should touch C.
- | | |
|---------|---------|
| A | 41.5 mm |
| B | 40.5 mm |
| C | 40.0 mm |

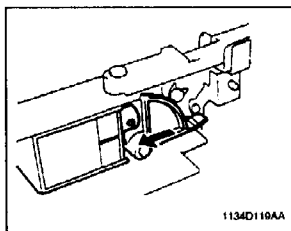


3. After this adjustment, check that the other finger also meets the above requirement.

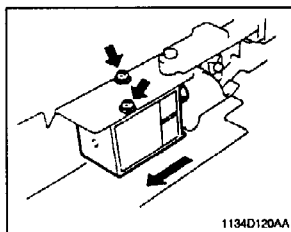
NOTE

If the fingers cannot be positioned correctly through steps 2 and 3, loosen the two solenoid mounting screws and adjust the position of the solenoid. Then, repeat steps 2 and 3.

(4) Adjustment of Manual Feed Paper Take-Up Solenoid SL4

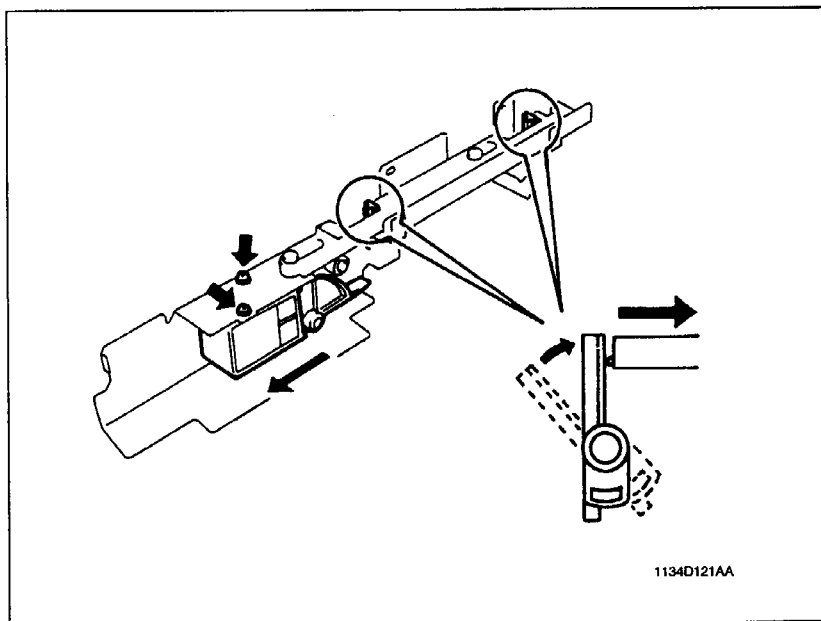


1. Remove the SL4 mounting bracket. (For the removal steps, see p. D-27.)
2. Manually bring SL4 into the energized position (plunger pushed in).
 - * A click is heard when the solenoid is energized. Then, hold the plunger in position.



3. Loosen two screws that secure the SL4 and slide SL4 all the way in the direction of the arrow.

4. Slowly move the SL4 in the direction opposite that in step 3. When the two Stoppers just swing into the upright position, tighten the two SL4 mounting screws.



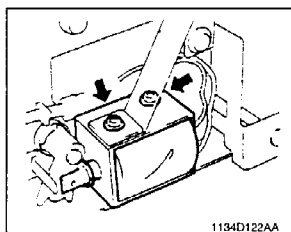
(5) Adjustment of Exit/Duplex Solenoid SL5

◆ Requirement

- With the lever in contact with the stopper (SL5 in the deenergized position), the gap between the plunger E-ring stopper and the solenoid should be 4.0 to 4.5 mm.

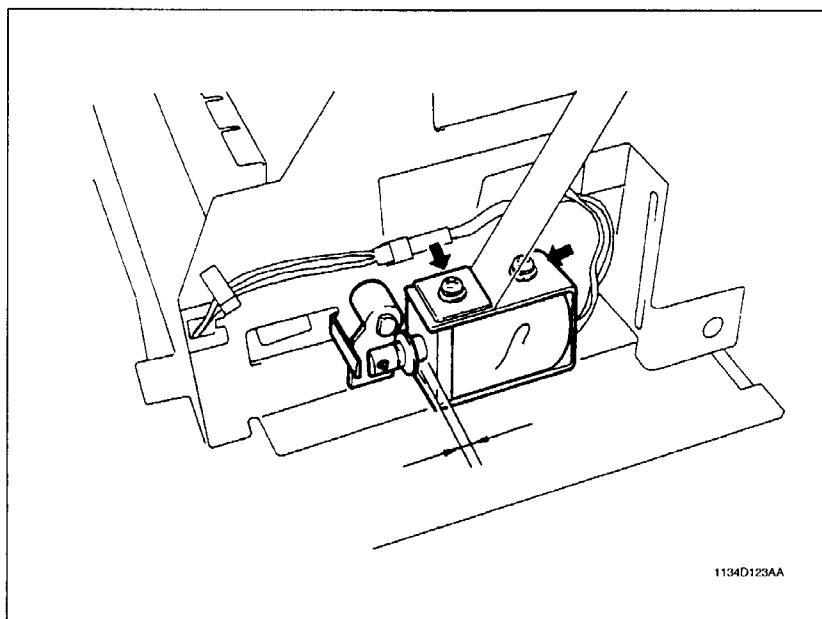
◆ Important

- After the adjustment, move the plunger manually to check that it moves smoothly and the Switching Plate swings up and down properly.



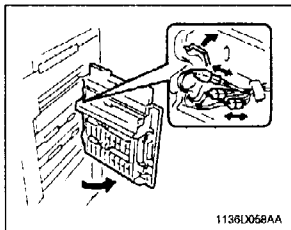
1. Open the Left Door.
2. Loosen two screws that secure the SL5.

3. Bring the lever into contact with the stopper. Keeping that position, move the SL5 so that the gap between the plunger E-ring stopper and solenoid measures 4.0 to 4.5 mm. When the specified dimension is reached, tighten the two SL5 mounting screws.

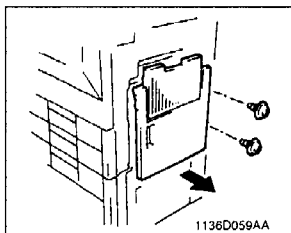


4 MISCELLANEOUS

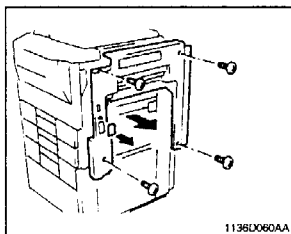
4-1. Installation of the Plug-In Counter (Option) Mounting Bracket



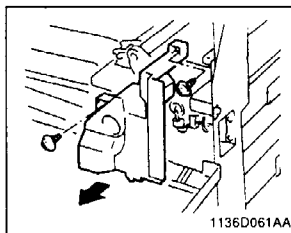
1. Open the Right Door.
2. Remove the harness from the cord clamp.
3. Unplug three connectors.



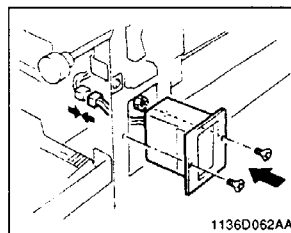
4. Remove two screws and the Right Door.



5. Remove the Counter Cover.
6. Remove four screws and the Right Cover.



7. Remove the PC Unit.
8. Remove two screws and the cover.



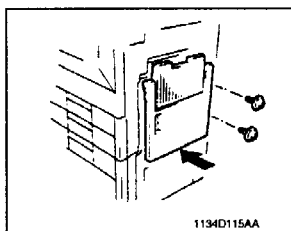
9. Connect the Plug-In Counter connector.
10. Secure the Plug-In Counter Mounting Bracket with the two screws.

NOTE

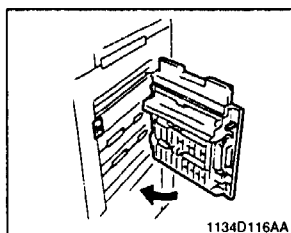
When the Plug-In Counter is mounted, be sure to turn "ON" the "Plug-In Counter" of "System Input" available from the Tech. Rep. mode.

4-2. ADJUSTMENT OF THE RIGHT DOOR

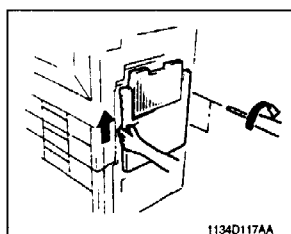
If the Right Door has been removed and reinstalled, the position of the actuator of Right Upper Door Interlock Switch S22 may deviate from the correct position. Hence, the necessity of the following adjustment.



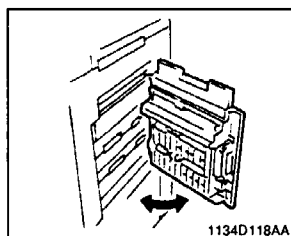
1. Mount the Right Door with two screws. (At this time, only temporarily tighten these screws.)



2. Lightly close the Right Door so that the S22 actuator will not contact the frame.



3. Due to its own weight, the front end of Right Door tends hang lower. Lifting the front end slightly, tighten the two mounting screws.



4. Open and close the Right Door two to three times to check that the S22 actuator properly actuates and deactuates S22.

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MEMO

GENERAL

1 SAFETY INFORMATION

(ALL Areas)

CAUTION

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type
recommended by the manufacturer.
Dispose of used batteries according
to the manufacturer's instructions.

(Denmark only)

ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

(Norway only)

ADVARSEL

Eksplosjonsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende
type anbefalt av apparatfabrikanten.
Brukte batterier kasseres i henhold til fabrikantens
instruksjoner.

(Sweden only)

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent
typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens
instruktion.

(Finland only)

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
tyyppiin. Hävitä Käytetty paristo valmistajan ohjeiden
mukaisesti.

2 SPECIFICATIONS

TYPE	: Desktop (with Stationary Platen)
PHOTOCONDUCTOR	: Organic Photoconductor
COPYING SYSTEM	: Electrostatic Dry Powdered Image Transfer to Plain Paper
PAPER FEEDING SYSTEM	: 3-Way Feeding 1st Drawer: Fixed Paper Size Tray (500 sheets of paper) 2nd Drawer: Fixed Paper Size Tray (500 sheets of paper) Multi Bypass Table (50 sheets of paper)
EXPOSURE SYSTEM	: Mirror Scanning, Slit Exposure
DEVELOPING SYSTEM	: Minolta New Micro-Toning System
CHARGING SYSTEM	: Single-Wire DC Negative Corona with Scorotron System
IMAGE TRANSFER SYSTEM	: Visible Image Transfer by means of a Single-Wire DC Negative Corona with Corotron System
PAPER SEPARATING SYSTEM	: Single-Wire AC Corona with Corotron System, positive DC bias voltage, and Paper Separator Fingers
PC DRUM CLEANING	: By means of Cleaning Blade
OZONE REMOVAL	: By means of Ozone Filter
FUSING SYSTEM	: Heat Roller
PAPER DISCHARGING SYSTEM	: Charge Neutralizing Brush
TYPES OF ORIGINALS	: sheets, books, and other three-dimensional objects weighing up to 3kg (6-1/2 lbs.)
MAXIMUM ORIGINAL SIZE	: A3L or 11" × 17"L (L: Lengthwise)

COPY MEDIUM:

		1st/2nd Drawer	Multi Bypass Table
Medium	Plain paper (60 to 90 g/m ²)	O	O
	Translucent paper	—	O *1
	Transparencies	—	O *1
	Thick paper (91 to 157 g/m ²)	—	O *1
	Recycled paper	O	O *1
Dimensions	Maximum (Width × Length)	297 × 432 mm	297 × 432 mm
	Minimum (Width × Length)	140 × 182 mm	100 × 140 mm

O: Permissible —: Not permissible *1: 20 sheets or less

WARMING-UP TIME : 150 sec. or less with room temperature of 23°C and rated power voltage

WARMING-UP TIME AFTER ENERGY SAVER : 30 sec. or less with room temperature of 23°C and rated power voltage

AUTO CLEAR TIME : 60 ± 2 sec.

FIRST COPY TIME : A4C or 8-1/2" × 11"C from 1st Drawer: 4.1 sec. or less

CONTINUOUS COPY SPEED (copies/min., fed from 1st Drawer)

<EP4050>

Metric Areas

<div>Zoom Ratio</div> <div>Size</div>	×1.000	×0.500	×2.000
A3L	25	25	25
B4L	29	29	29
A4L	34	34	30
A4C	45	43	31
B5L	39	39	31
B5C	45	45	31

Inch Areas

<div>Zoom Ratio</div> <div>Size</div>	×1.000	×0.500	×2.000
11" × 17"	25	25	25
8-1/2" × 11" L	37	37	31
8-1/2" × 11" C	45	42	31

L: Lengthwise; C: Crosswise

<EP3050>

Metric Areas

<div>Zoom Ratio</div> <div>Size</div>	×1.000	×0.500	×2.000
A3L	20	20	20
B4L	22	22	22
A4L	27	27	27
A4C	35	35	30
B5L	30	30	30
B5C	35	35	31

Inch Areas

<div>Zoom Ratio</div> <div>Size</div>	×1.000	×0.500	×2.000
11" × 17"	20	20	20
8-1/2" × 11" L	29	29	29
8-1/2" × 11" C	35	35	30

L: Lengthwise; C: Crosswise

MULTIPLE COPIES : 1 to 999 (count-down system)

ZOOM RATIOS:

	Area Mode	Metric	Inch
Fixed	Full Size	× 1.000	× 1.000
	Reduction	× 0.816	× 0.785
		× 0.707	× 0.733
		× 0.500	× 0.647
			× 0.500
	Enlargement	× 2.000	× 2.000
		× 1.414	× 1.545
		× 1.154	× 1.294
			× 1.214
Variable	× 0.500 to × 2.000 (in 0.001 increments)		

LENS : Through Lens (F = 6.0, f = 190 mm)

EXPOSURE LAMP : Halogen Frost Tube Lamp

FUSING : In standby, during a copy cycle = 200°C

TEMPERATURE In Energy Saver = 180°C

POWER/CURRENT CONSUMPTION

Copier only:

Voltage	Exposure Lamp (Rating)	Fusing Heater Lamp (Rating)	Max. Power Consumption	In Standby
115, 127 V	80 V 230 W	115, 127 V 850 W	1200 W	900 W
120 V	80 V 230 W	120 V 850 W	1260 W	960 W
200 ~ 220 V	160 V 250 W	220 V 850 W	1220 ~ 1350 W	900 ~ 1020 W
220 ~ 240 V	160 V 250 W	220 V 850 W	1220 ~ 1350 W	900 ~ 1020 W

Copier with Complete Options:

Voltage	Max. Power Consumption	Max. Current Consumption
115 V	1300 W	12 A
120 V	1340 W	12 A
127 V	1300 W	11 A
200 ~ 220 V	1350 ~ 1490 W	7.5 A
220 ~ 240 V	1350 ~ 1490 W	6.8 A

POWER REQUIREMENTS : 115 V, 120 V, 127 V, 200 V, 220 V, 230 V, 240 V;
50/60 Hz

ENVIRONMENTAL CONDITIONS:

Temperature	10 to 35°C with a fluctuation of 10°C or less per hour
Humidity	15 to 85% RH with a fluctuation of 20% RH or less per hour
Ambient Illumination	3,000 lux or less
Levelness	1° (1.75 mm/100 mm)

DIMENSIONS : Width 620 mm or 24-1/2" (Excluding Copy Tray)
Depth 685 mm or 27"
Height ... 595 mm or 23-1/2" (up to Original Glass surface)

WEIGHT : 86 kg or 189 lbs (Excluding Copy Tray, Stater, Toner, Copy Paper)

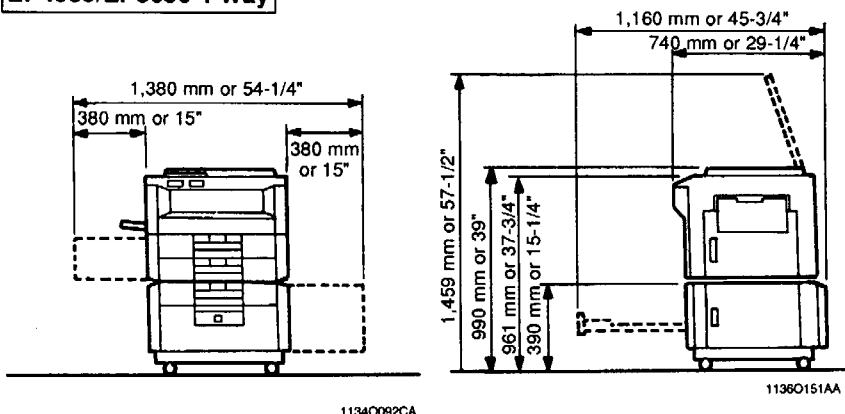
STANDARD ACCESSORIES : Copy Tray, PC Drum, Starter, Operator's Manual, Unpacking/Setting-up Instructions

3 SPACE REQUIREMENTS

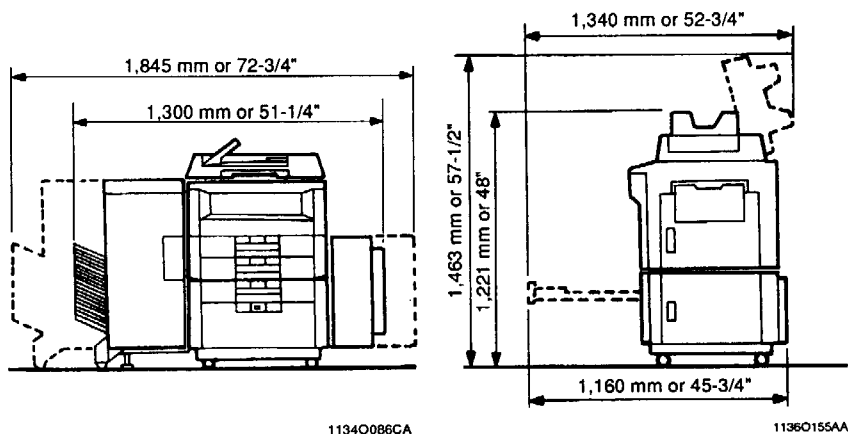
To ensure easy copier operation, supply replacement, and service maintenance, adhere to the recommended space requirements detailed below.

* Be sure to allow a clearance of 150 mm (6") or more at the back of the copier as there is a ventilation duct.

EP4050/EP3050 4 Way



EP4050/EP3050 with a Complete Lineup of Options



4 PRECAUTIONS FOR INSTALLATION

Installation Site

To ensure safety and utmost performance of the copier, the copier should NOT be used in a place:

- Where it will be subject to extremely high or low temperature or humidity.
- Which is exposed to direct sunlight.
- Which is in the direct air stream of an air conditioner, heater or ventilator.
- Which puts the operator in the direct stream of exhaust from the copier.
- Which has poor ventilation.
- Where ammonia gas might be generated.
- Which does not have a stable, level floor.
- Where it will be subject to sudden fluctuations in either temperature or humidity. If a cold room is quickly heated, condensation forms inside the copier, resulting in blank spots in the copy.
- Which is near any kind of heating device.
- Where it may be splashed with water.
- Which is dirty or where it will receive undue vibration.
- Which is near volatile flammables or curtains.

Power Source

Use an outlet with a capacity of 115/120/127V, 12A or more, or 200/220/230/240V, 7.5A or more.

- If any other electrical equipment is sourced from the same power outlet, make sure that the capacity of the outlet is not exceeded.
- Use a power source with little voltage fluctuation.
- Never connect by means of a multiple socket any other appliances or machines to the outlet being used for the copier.
- Make the following checks at frequent intervals:
 - Is the power plug abnormally hot?
 - Are there any cracks or scrapes in the cord?
 - Has the power plug been inserted fully into the outlet?
 - Does something, including the copier itself, ride on the power cord?
- Ensure that the copier does not ride on the power cord or communications cable of other electrical equipment, and that it does not become wedged into or underneath the mechanism.

Grounding

To prevent receiving electrical shocks in the case of electrical leakage, always ground the copier.

- Connect the grounding wire to:
 - The ground terminal of the outlet.
 - A grounding contact which complies with the local electrical standards.
- Never connect the grounding wire to a gas pipe, the grounding wire for a telephone, or a water pipe.

5 PRECAUTIONS FOR USE

To ensure that the copier is used in an optimum condition, observe the following precautions.

- Never place a heavy object on the copier or subject the copier to shocks.
- Insert the power plug all the way into the outlet.
- Do not attempt to remove any panel or cover which is secured while the copier is making copies.
- Do not turn OFF the Power Switch while the copier is making copies.
- Provide good ventilation when making a large number of copies continuously.
- Never use flammable sprays near the copier.
- If the copier becomes inordinately hot or produces abnormal noise, turn it OFF and unplug it.
- Do not turn ON the Power Switch at the same time when you plug the power cord into the outlet.
- When unplugging the power cord, do not pull on the cord; hold the plug and pull it out.
- Do not bring any magnetized object near the copier.
- Do not place a vase or vessel containing water on the copier.
- Be sure to turn OFF the Power Switch at the end of the workday or upon power failure.
- Use care not to drop paper clips, staples, or other small pieces of metal into the copier.

■ Operating Environment

The operating environmental requirements of the copier are as follows.

- Temperature: 10°C to 30°C with a fluctuation of 10°C per hour
- Humidity: 15% to 85% RH with a fluctuation of 20% RH per hour

■ Power Requirements

The power source voltage requirements are as follows.

- Voltage Fluctuation: AC115/120/127/200/220/230/240V
±10% (Copying performance assured)
-15% (Paper feeding performance assured)
- Frequency Fluctuation: 50/60 Hz ±0.3%

6 HANDLING OF THE CONSUMABLES

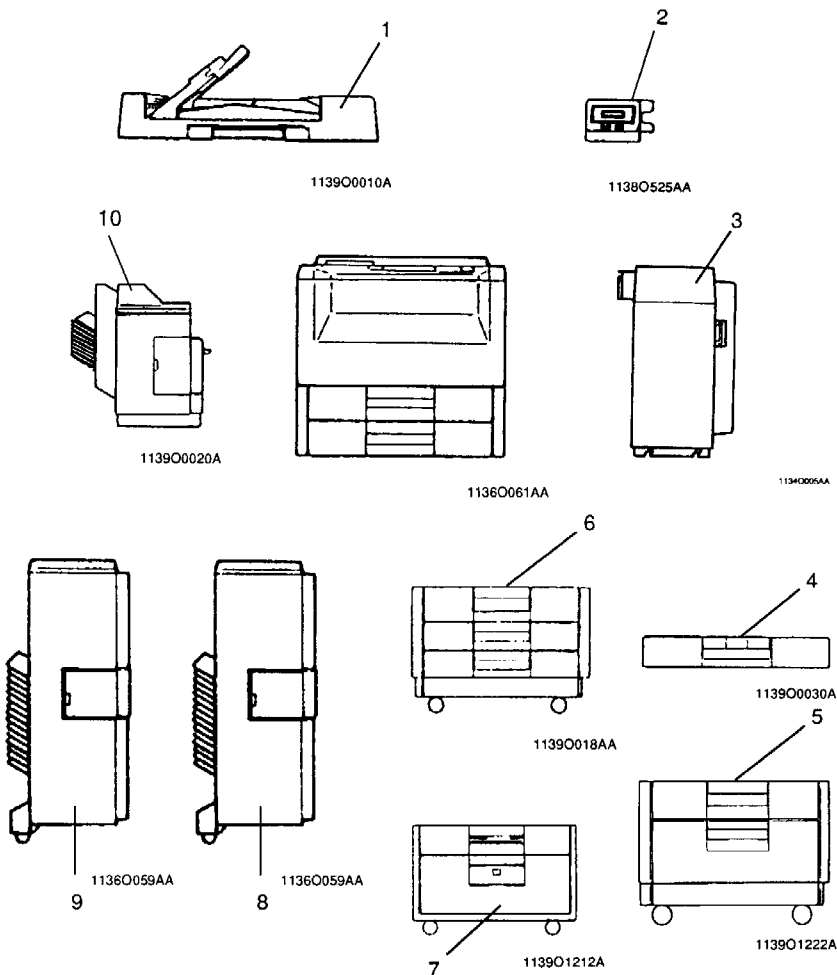
Before using any consumables, always read the label on its container carefully.

- Use the right toner. The applicable copier model name is indicated on the Toner Bottle.
- Paper is apt to be easily damaged by dampness. To prevent absorption of moisture, store paper, which has been removed from its wrapper but not loaded into the Drawer, in a sealed plastic bag in a cool, dark place.
- Keep consumables out of the reach of children.
- Do not touch the PC Drum with bare hands.
- Store the paper, toner, and other consumables in a place free from direct sunlight and away from any heating apparatus.
- The same sized paper is of two kinds, short grain and long grain. Short grain paper should only be fed through the copier crosswise, long grain paper should only be fed lengthwise.
- If your hands become soiled with toner, wash them with soap and water immediately.
- Do not throw away any used consumables (PC Drum, starter, toner, etc.). They are to be collected.

NOTE

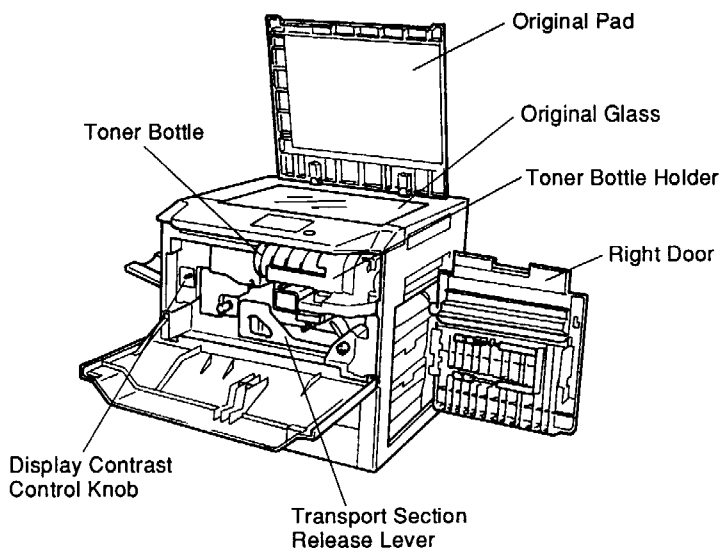
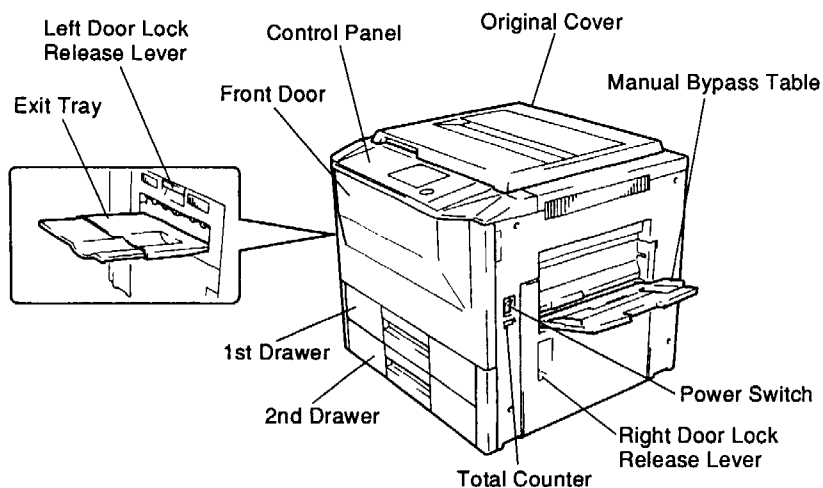
Do not burn, bury in the ground, or throw into the water any consumables (PC Drum, starter, toner, etc.).

7 SYSTEM OPTIONS



1. Duplexing Document Feeder AFR-9
2. Data Controller D-102
3. Large Capacity Cassette C-301
4. Duplex Unit AD-5
5. Paper Feed Cabinet PF-2D
6. Paper Feed Cabinet PF-202
(Except USA, CANADA)
7. Paper Feed Cabinet PF-102
8. 20-Bin Sorter S-205
9. Staple Sorter ST-206
10. Staple Sorter ST-101
(For EP3050 only)

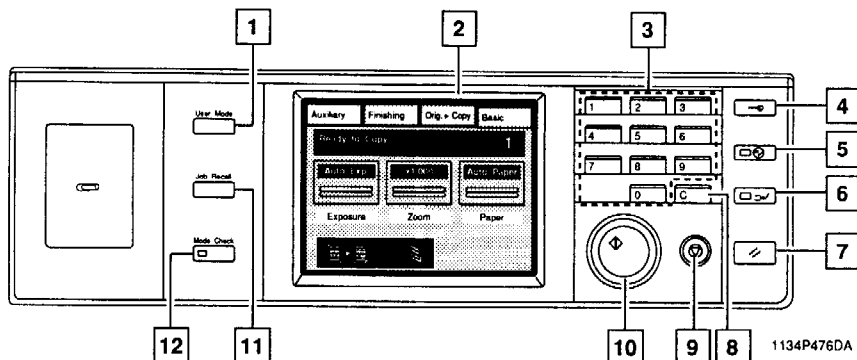
8 PARTS IDENTIFICATION



9 CONTROL PANEL KEYS AND TOUCH PANEL

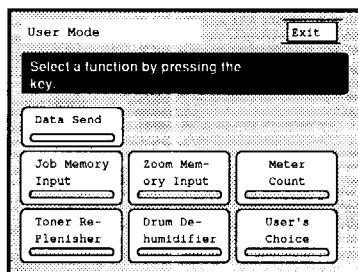
* For more details, see the "Operator's Manual" shipped together with the copier.

9-1. Control Panel Keys



1 User Mode Key

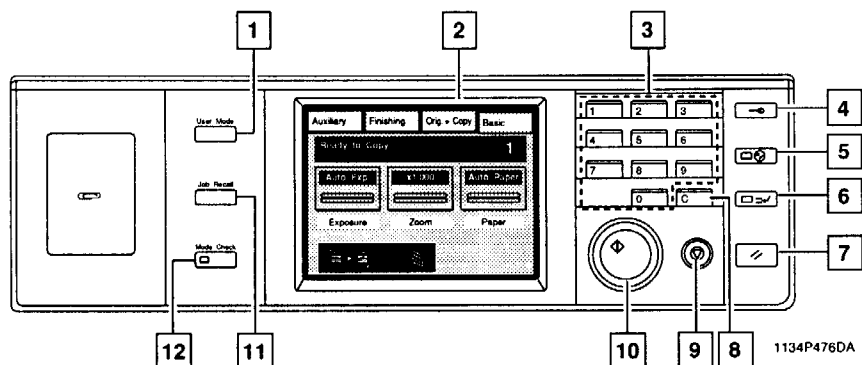
- Shows the User Mode setting screen on the Touch Panel. It looks like as follows.



1134P359CA

Data Send	*1	Transmits the copier condition to the center when a DT-103 is installed on the copier.
Job Memory Input		Stores in memory up to 10 different, frequently used copying-job programs and recalls them later as necessary. If "Copy Track" has been turned ON in the "Administrator Mode" of User's Choice, five more jobs can be stored in memory for each account (max. 140 jobs).
Zoom Memory Input		Stores in memory up to three different, frequently used zoom ratios.
Meter Count		Allows for checking the total count of each of the four different counters - Total, Size, 2-Sided Total, and 2-Sided Size.
Toner Replenisher		Regains the normal image density quickly. If the image density is sufficiently high, toner is not replenished, but only mixed.
Drum Dehumidifier		Dries the surface of the PC Drum, preventing condensation. (The cycle lasts for about 3 min.)
User's Choice		Allows for selecting the default settings according to the user's own needs. (For details, see "SWITCHES ON PWBs.")

*1: Except the U.S.A. and Canada



1134P476DA

2 Touch Panel

- A large liquid-crystal display is used for greater ease of operation.

3 10-Key Pad

- Sets the number of copies to be made, zoom ratio, paper size, access number, and other numeric data including that for the Tech. Rep. mode.

4 Access Mode Key

- Enables and disables a copy cycle if "Copy Track" has been turned ON of User's Choice.

5 Energy Saver Key

- Sets the copier into the Energy Saver mode, turning OFF all control panel indicators except the Start Key and Energy Saver Key.

6 Interrupt Key

- Interrupts a current job with a different one or restores the copier to the previous job.

7 Panel Reset Key

- Sets the copier into the initial mode, clearing all settings made previously on the control panel.

8 Clear Key

- Clears the number of copies, zoom ratio, and other data including the counter reading.
- Ejects an original fed previously onto the Original Glass by the Duplexing Document Feeder.

9 Stop Key

- Stops a multi-copy cycle and a Test mode operation.
- Used also in combination with other keys to enter the Adjust mode. (With the Tech. Rep. Mode screen on the Touch Panel, press the Stop Key and then the Start Key, in that order.)

10 Start Key

- Starts a multi-copy cycle and a Test mode operation.
- Used also in combination with other keys to enter the Adjust mode. (With the Tech. Rep. Mode screen on the Touch Panel, press the Stop Key and then the Start Key, in that order.)

11 Job Recall Key

- Selects the Job Recall screen, on which the user can recall or check a copying-job program previously stored in memory.

12 Mode Check Key

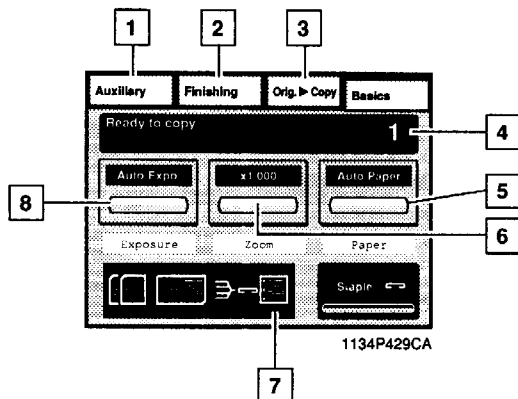
- Selects the Mode Check screen
- From this screen, the user can access the setting screen of a particular function and change or cancel the setting as necessary.

9-2. Explanation of the Touch Panel

- The screen shown on the Touch Panel is classified into the four types: the Basic, Warning, User Mode, and Tech. Rep. Mode screens.
- Following is the detailed explanation of what is shown on the Basic and Warning screens. For details of the User Mode screen, see "1 User Mode Key" on p. G-10. For the Tech. Rep. Mode screen, see SWITCHES ON PWBs.

(1) Basic Screen

- The Basic screen is the initial screen that appears when the power is turned ON, the control panel is reset, or auto clear function is activated.



1 Auxiliary Key

- When the Auxiliary key is touched, the Auxiliary functions menu screen appears, allowing the operator to select either Cover, Page Insertion, OHP Interleaving, Book Copy, File Margin, or Edge/Frame Erase.
- The functions "Cover" and "Page Insertion" appear only if the copier is equipped with an AFR-9.

2 Finishing Key

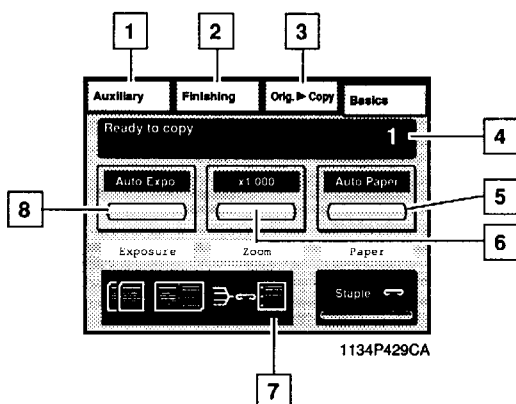
- When the Finishing key is touched, a screen appears that allows the operator to select the finishing type, either Non-Sort, Sort, Sort-and-Staple, Group, Hole Punch, or Manual Staple.
- The functions other than Non-Sort appear only when the copier is equipped with a Staple Sorter.


3 Orig. ▶ Copy Key

- When the Orig. ▶ Copy key is touched, a screen appears that allows the operator to set the original ▶ copy type.

4 Message Display

- Shows the current copier status, operating instructions or caution, and other data including the number of copies selected.



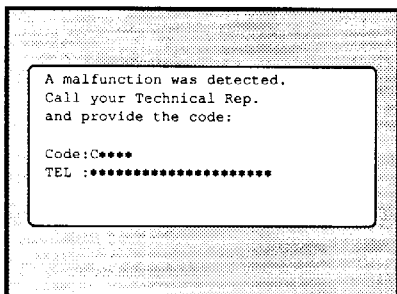
- 5 Paper Key
 - When the Paper key is touched, a screen appears that allows the operator to select the paper size.
 - The graphic symbol "  " appears on the paper size key when the corresponding drawer runs out of paper.
- 6 Zoom Key
 - When the Zoom key is touched, a screen appears that allows the operator to select the zoom ratio. The functions available on the screen are Auto Size, fixed ratios, Zoom Up/Down, and User Set (for 10-Key Pad input and zoom memory).
- 7 Set Function Display
 - Shows graphic representations of functions set other than the initial ones, including the Orig. ► Copy and Finishing types.
- 8 Exposure Key
 - When the Exposure key is touched, a screen appears that allows the operator to select the image density. Available function keys are the Auto exposure mode key and manual exposure setting keys.

(2) Warning Screen

- The warning screen may be a malfunction display, error display, warning display, or a caution display.
- Here are examples to show what kind of information each display gives.

<Malfunction Display>

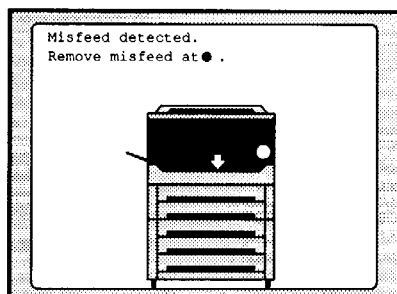
A malfunction display is given when trouble occurs which cannot be corrected by the user and requires remedial action by the Tech. Rep. (For example, a malfunction that can be identified with a specific code.)



1134M039AA

<Error Display>

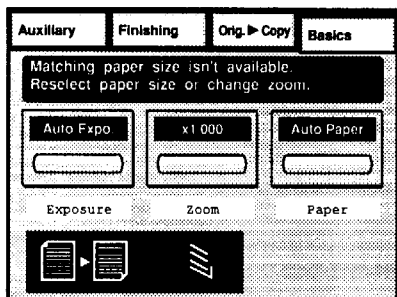
An error display is given when trouble occurs which can be corrected by the user. (For example, a door or option left loose and a paper misfeed.)



1134P347CA

<Warning Display>

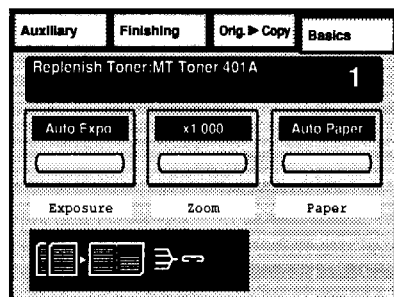
A warning display is given when any further copier operation will not be possible, or only faulty results will come out, due to erroneous panel settings or other cause. (For example, unmatched paper size in Auto Paper mode.)



1134M038AA

<Caution Display>

A caution display is given when, though further copier operation will be possible, it could result in a malfunction. (For example, a toner-empty condition.)



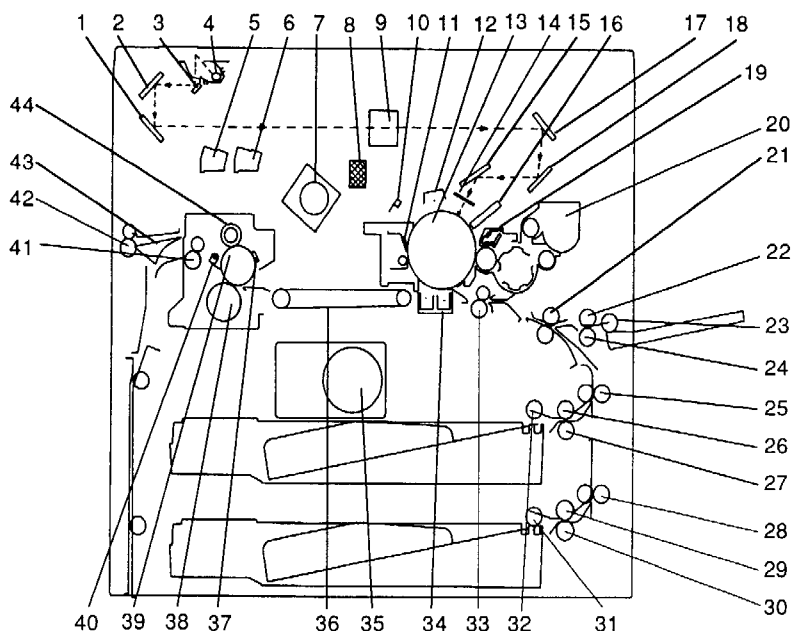
1134P352CA

Note: For the European market, the toner is MT Toner 401B.

MEMO

MECHANICAL/
ELECTRICAL

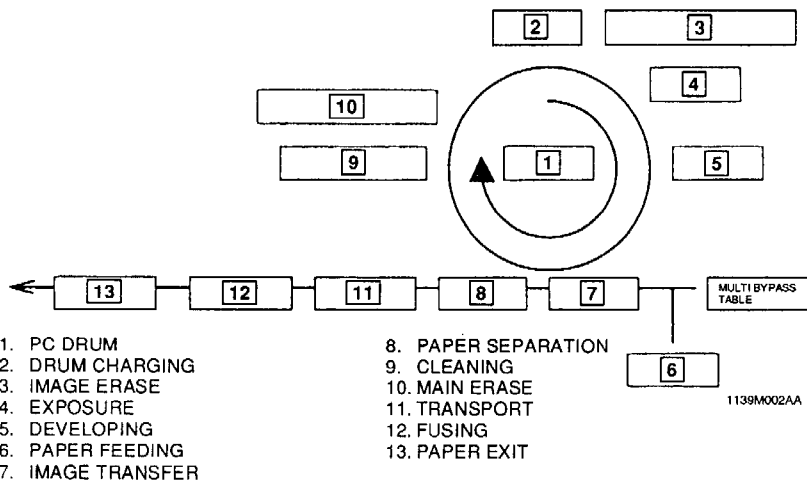
1 CROSS-SECTIONAL VIEW



1134MD01AB

- | | |
|---|--|
| 1. 3rd Mirror | 23. Manual Bypass Take-Up Roll |
| 2. 2nd Mirror | 24. Manual Bypass Separator Roll |
| 3. 1st Mirror | 25. Upper Vertical Transport Roller |
| 4. Exposure Lamp LA1 | 26. 1st Drawer Feed Roll |
| 5. Original Size Detecting Sensor CD1 PC115 | 27. 1st Drawer Separator Roll |
| 6. Original Size Detecting Sensor CD2 PC119 | 28. Lower Vertical Transport Roller |
| 7. Ventilation Fan Motor M3 | 29. 2nd Drawer Feed Roll |
| 8. Ozone Filter | 30. 2nd Drawer Separator Roll |
| 9. Lens | 31. 2nd Drawer Paper Take-Up Roll |
| 10. Main Erase Lamp LA3 | 32. 1st Drawer Paper Take-Up Roll |
| 11. Cleaning Blade | 33. Synchronizing Roller |
| 12. PC Drum Charge Corona | 34. Image Transfer/Paper Separator Coronas |
| 13. PC Drum | 35. Main Drive Motor M1 |
| 14. Dust-Proof Glass | 36. Suction Belt |
| 15. 6th Mirror | 37. Fusing Thermoswitch TS1 |
| 16. Image Erase Lamp LA2 | 38. Lower Fusing Roller |
| 17. 4th Mirror | 39. Upper Fusing Roller |
| 18. 5th Mirror | 40. Fusing Paper Separator Finger |
| 19. Developing Unit | 41. 1st Paper Exit Roller |
| 20. Sub Hopper | 42. 2nd Paper Exit Roller |
| 21. Transport Roller | 43. Exit/Duplex Switching Guide |
| 22. Manual Bypass Feed Roll | 44. Cleaning Roller |

2 COPY PROCESS



1. PC Drum

The PC Drum is an aluminum cylinder coated with a photosensitive semiconductor. It is used as the medium on which a visible developed image of the original is formed.

(For more details, see p. M-25.)

2. Drum Charging

The PC Drum Charge Corona Unit is equipped with a single wire and a Scorotron Grid to deposit a uniform negative charge across the entire surface of the PC Drum.

(For more details, see p. M-27.)

3. Image Erase

Any areas of charge which are not to be developed are neutralized by lighting up LEDs.

(For more details, see p. M-60.)

4. Exposure

Light from the Exposure Lamp reflected off the original is guided to the surface of the PC Drum and reduces the level of the negative charges, thereby forming an electrostatic latent image.

(For more details, see p. M-34.)

5. Developing

Toner positively charged in the Developer Mixing Chamber is attracted onto the electrostatic latent image changing it to a visible, developed image. A DC negative bias voltage is applied to the Sleeve/Magnet Roller to prevent toner from being attracted onto those areas of the PC Drum which correspond to the background areas of the original.

(For more details, see p. M-67.)

6. Paper Feeding

Paper is fed either automatically from the 1st or 2nd Drawer, or manually via the Manual Bypass Table (capacity 50 sheets of paper). Paper separation is accomplished by the torque limiter fitted to the Paper Separator Roll.

(For more details, see p. M-90.)

7. Image Transfer

The single-wire Image Transfer Corona Unit applies a DC negative corona emission to the underside of the paper, thereby attracting toner onto the surface of the paper.

(For more details, see p. M-124.)

8. Paper Separation

The single-wire Paper Separator Corona Unit applies an AC corona emission to the underside of the paper to neutralize the paper. In addition, mechanical paper separation is provided by the two PC Drum Paper Separator Fingers fitted to the PC Unit.

(For more details, see p. M-124, 132.)

9. Cleaning

Residual toner on the surface of the PC Drum is scraped off by the Cleaning Blade.

(For more details, see p. M-128.)

10. Main Erase

Light from the Main Erase Lamp neutralizes any surface potential remaining on the surface of the PC Drum after cleaning.

(For more details, see p. M-136.)

11. Transport

The paper is fed to the Fusing Unit by the Suction Belts.

(For more details, see p. M-138.)

12. Fusing

The developed image is permanently fused to the paper by a combination of heat and pressure applied by the Upper and Lower Fusing Rollers.

(For more details, see p. M-141.)

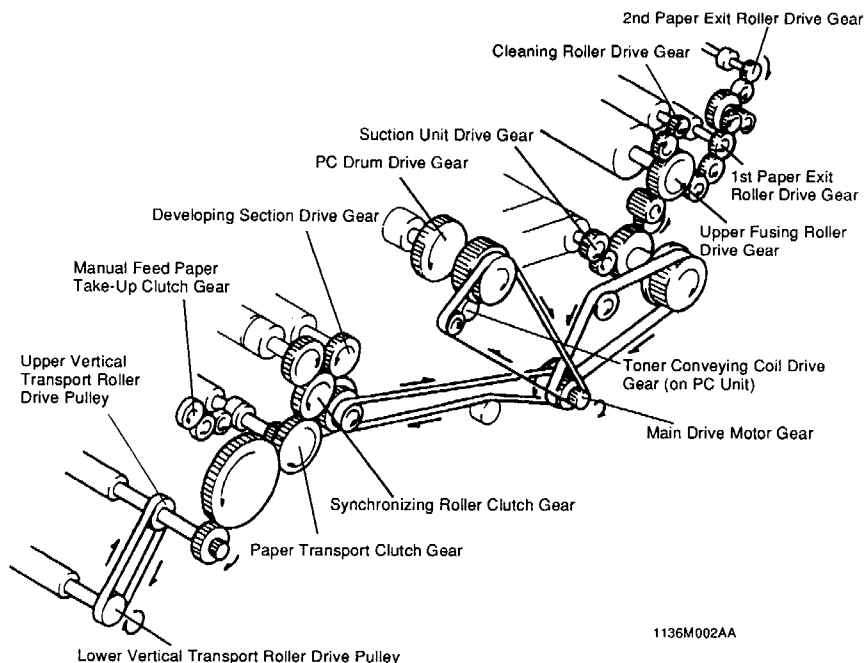
13. Paper Exit

After the fusing process the paper is fed out by the Paper Exit Rollers onto the Exit Tray.

(For more details, see p. M-149.)

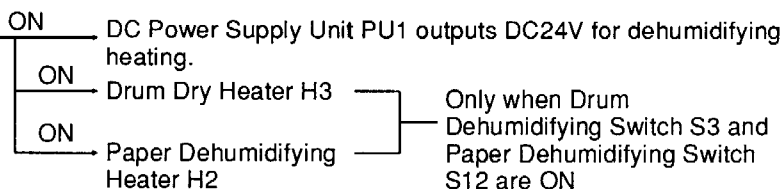
3 DRIVE SYSTEM

The Main Drive Motor provides drive for the entire mechanism of the copier. To help minimize operating noise, timing belts and plastic gears are used in large numbers for the drive train parts.

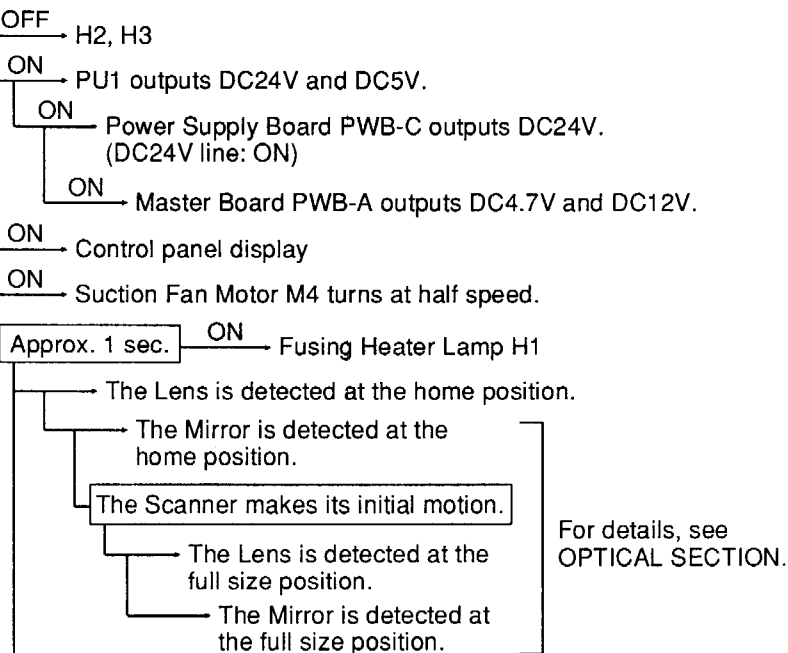


4 SEQUENTIAL EXPLANATION

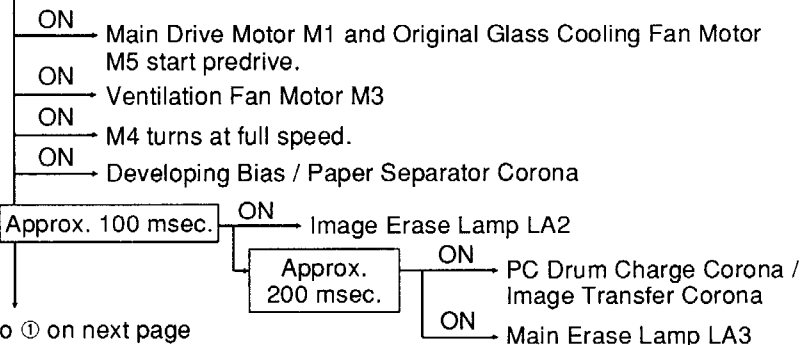
A The power cord is plugged into the outlet.



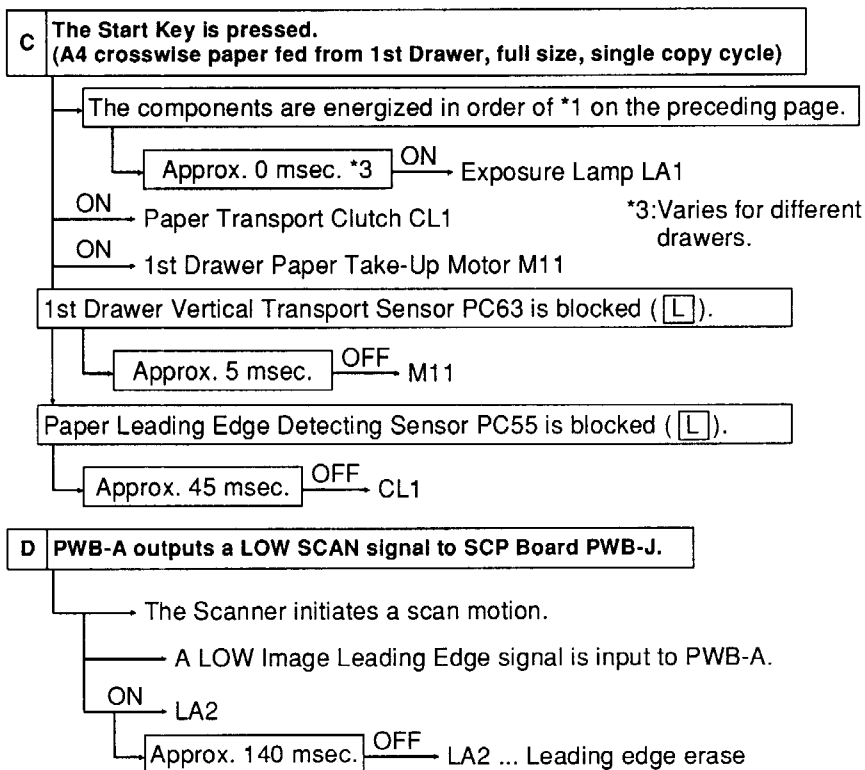
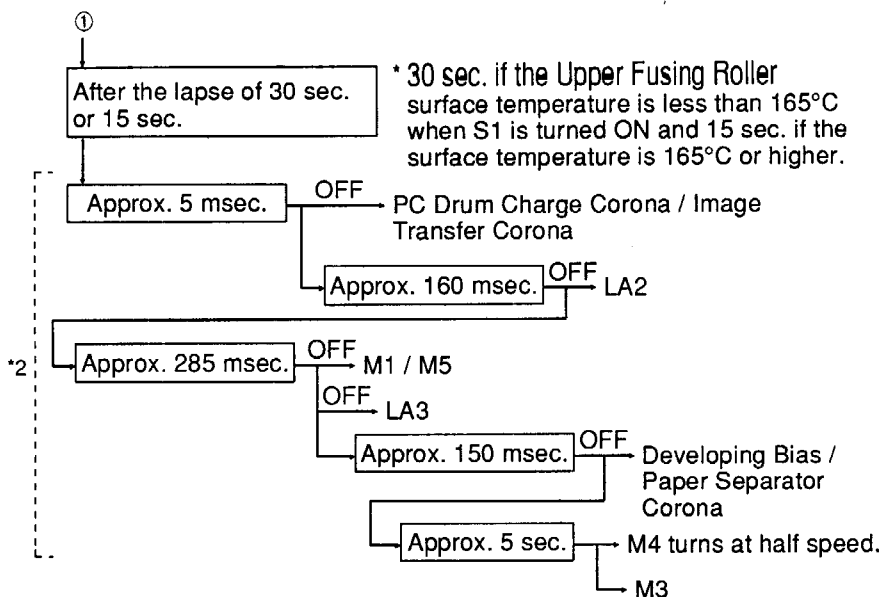
B Power Switch S1 is turned ON.



The surface temperature of the Upper Fusing Roller reaches 175°C.



To ① on next page



E PWB-J outputs a LOW TRON signal to PWB-A.

ON → CL1

ON → Synchronizing Roller Clutch CL2

Approx. 190 msec.

ON → Separator Solenoid SL1

Approx. 150 msec. OFF → SL1

F PWB-J outputs a LOW SCEND signal to PWB-A.

Approx. 200 msec.

→ SCAN signal: **H** ... The Scanner stops and starts a return motion.

Approx. 220 msec. OFF → LA1

G The trailing edge of the paper moves past Transport Roller Sensor PC54 (unblocked: **H).**

Approx. 5 msec. OFF → CL1

H The trailing edge of the paper moves past Paper Leading Edge Detecting Sensor PC55 (unblocked: **H).**

Approx. 210 msec. OFF → CL2

I The trailing edge of the paper moves past Paper Exit Switch S53 (ON: **H).**

The components are deenergized in order of *2 on the preceding page.

5 WATCHDOG (CPU OVERRUN MONITOR) FUNCTION

5-1. Overview

The watchdog function monitors whether any of the CPUs mounted in the copier overrun. If this function detects that a CPU overruns, the copier automatically resets the CPU, thereby restarting the logic circuit and mechanism.

Even if a copier CPU operates erratically due to electrical noise, therefore, the copier is able to recover from the faulty condition so that the number of visits made by the Technical Representative for CPU overrun can be minimized.

5-2. Configuration

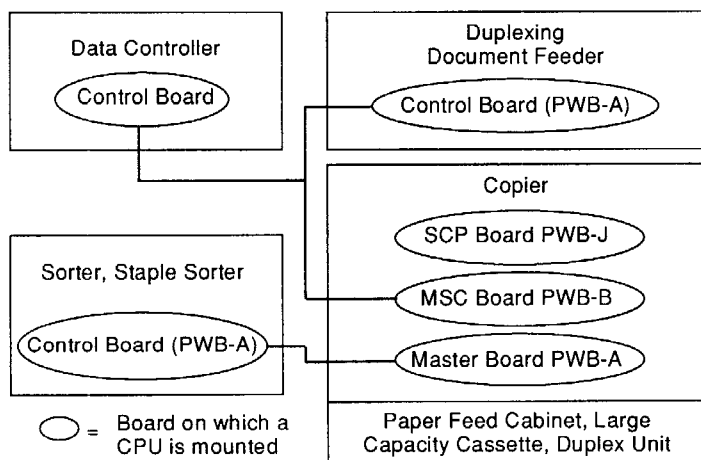
The copier has three printed-circuit boards each on which a CPU is mounted:

- SCP (Scanner Control Processor) Board PWB-J that controls the optical system;
- MSC (Macro System Controller) Board PWB-B that controls the control panel and system; and,
- Master Board PWB-A which controls the copier, Paper Feed Cabinet, Large Capacity Cassette, and Duplex Unit.

In addition to these, each of the control boards for the Data Controller, Duplexing Document Feeder, and Sorter/Staple Sorter is equipped with a CPU.

The watchdog functions are summarized as follows:

- Each of the copier CPUs monitors whether or not it overruns.
- The PWB-B monitors the communications conditions of the CPUs in the Duplexing Document Feeder and Data Controller.
- The PWB-A monitors the communications conditions of the CPUs in the Sorter and Staple Sorter.
- The control boards for the Paper Feed Cabinet and Duplex Unit do not have a CPU in them. Instead, the PWB-A in the copier controls their operations.



5-3. Watchdog Function Post-Processing

The following processing is performed if a faulty condition is detected in the CPU. The Watchdog Counter available from the Tech. Rep. mode allows the Technical Representative to check if any faulty condition has occurred in the CPU. For details, see SWITCHES ON PWBs.

Faulty CPU	Processing (in Standby)	Processing (during Copy Cycle)
Copier	1 : The CPU is automatically reset (i.e., shutting down power to all CPUs including those in the options) as soon as a faulty CPU is detected.	1: Same as 1 on the left. 2: Since the paper is left inside the copier, the copier detects a misfed sheet of paper or two when power is turned ON again. If the MSC CPU is faulty, however, all paper in line for the exit will be ejected and all paper headed to the duplex will be stored, before restarting the CPU.
Sorter, Staple Sorter	1 : When the CPU malfunctions, the communication to Master Board PWB-A of the copier is cut off or faulty data is transmitted to the PWB-A. 2 : The PWB-A detects that the CPU of the Sorter or Staple Sorter is faulty. 3 : The PWB-A notifies MSC Board PWB-B that the CPU of the Sorter or Staple Sorter is faulty. 4 : As commanded by the PWB-B, Option Relays RY3C and 4C are turned OFF and ON to restart the option. 5 : The communication line from the CPU of the Sorter or Staple Sorter to PWB-A is recovered. 6 : PWB-A notifies PWB-B that the CPU of the Sorter or Staple Sorter has recovered from the faulty condition.	1 : Same as 1, 2, and 3 on the left. 2 : The paper take-up sequence is stopped. 3 : All sheets of paper being fed through the copier are fed out of the copier. 4 : Same as 4, 5, and 6 on the left.

Faulty CPU	Processing (in Standby)	Processing (during Copy Cycle)
Other than above	<ol style="list-style-type: none"> 1 : When the CPU malfunctions, the communication to MSC Board PWB-B of the copier is cut off or faulty data is transmitted to the PWB-B. 2 : PWB-B detects that the CPU malfunctions. 3 : As commanded by the PWB-B, Option Relays RY3C and 4C are turned OFF and ON to restart the option. 4 : The communication line from the CPU to PWB-B is recovered. 5 : PWB-B detects that the CPU has recovered from the faulty condition. 	<ol style="list-style-type: none"> 1 : Same as 1 and 2 on the left. 2 : The paper take-up sequence is stopped. 3 : All sheets of paper being fed through the copier are fed out of the copier. 4 : Same as 3, 4, and 5 on the left.

6 MALFUNCTION BYPASS FUNCTION

6-1. Overview of the Malfunction Bypass Function

- When a malfunction occurs in the copier, the malfunction bypass function permits the copier to continue operating if that malfunction is one of the predefined candidates for an isolated malfunction and if it will not affect the current copying operation. But, if an isolated malfunction occurs anytime during the actual copy cycle, the copier considers it a normal malfunction.
- If a copying function involving the isolated malfunction is selected, the message "Selected mode can't be used." appears on the Touch Panel and the copier rejects that function.
- When an isolated malfunction occurs, a tiny square "□" indicator appears in the lower left corner of the Basic Screen. Access the "Machine Status" display via the Tech. Rep. mode to ascertain the trouble code. Then refer to the Troubleshooting Manual for details.
- Trouble codes for up to five isolated malfunctions are shown on the "Machine Status" display. When a sixth isolated malfunction occurs, the copier considers it a normal malfunction, prompting a Tech. Rep. call. (The sixth malfunction is shown on the Touch Panel.) But, if all of the paper feed ports (except the manual feed port) show an isolated malfunction, the copier considers them a normal malfunction even though the isolated malfunction count may be less than five.




6-2. Candidates for Isolated Malfunctions

● Copier-Related

	Item	Malfunction Code
1	1st Drawer	C0920/C0924/C0350/C0370 *1. C0921~23/C0926
2	2nd Drawer	C0910/C0914/C0350/C0370 *2. C0911~13/C0916
3	Auto Paper, Auto Size	C0F02/C0FE1~C0FFF
4	ATDC	C0F30
5	AIDC	C0F20~23
6	Corona Wire take-up	C0100

*1, *2: For Inch Areas only

● Cabinet/Duplex/Sorter-Related

*3	7	3rd Drawer (PF-202)	C0900/C0904/C0351/C0352
*4	8	4th Drawer (PF-202)	C0950/C0954/C0351/C0352
	9	Large Capacity Cassette (C-301)	C09C0/C09C2/C0350/C0354/C0370/C0374
	10	Paper Feed Cabinet (PF-102)	C0990~96/C0998~9C/C0F79/C0351/C0352
	11	Duplex Unit (AD-5)	C0d00/C0d20/C0d50/C0353
*5	12	Sorting (S-205, ST-206/101)	 1134M071AA
	13	Stapling (ST-206/101)	 1134M072AA
	14	Punching (ST-206)	 1134M073AA

*3, *4: For Metric Areas only

*5: For details, see "ADDITIONAL INFORMATION FOR ST-206/S-205/ST-101 MOUNTED ON EP3050/EP4050."

7 IMAGE STABILIZATION SYSTEM

7-1. Overview of the Image Stabilization System

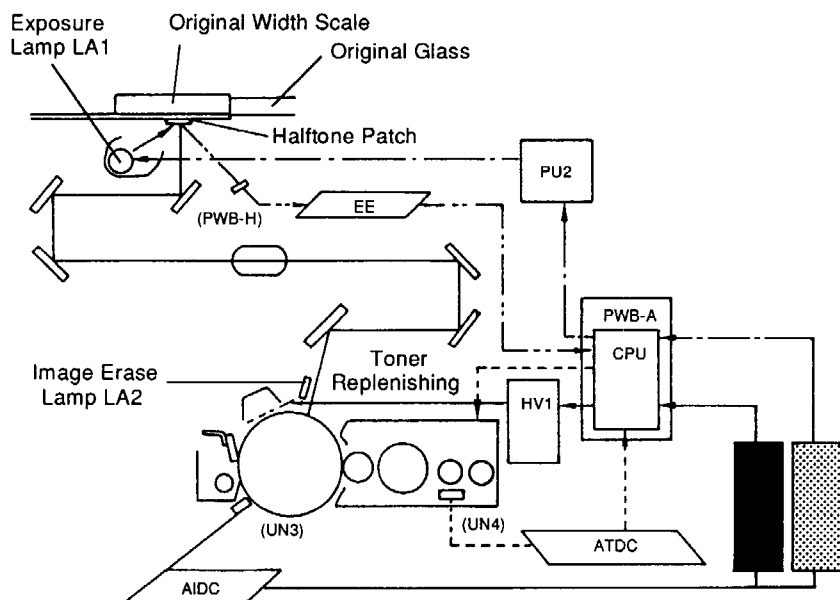
- ◆ The following image stabilization controls are provided to ensure stabilized copy image.

	Quality	Purpose	Control
Initial Setting	Image density, gradation	To make an initial adjustment of grid voltage (V _G) and optimum Exposure Lamp voltage using the FF or F5 operation.	<ul style="list-style-type: none"> • After making the variation adjustment and contamination correction for the AIDC Sensor, the copier produces a solid-black and halftone pattern and, through AIDC Sensor control, sets the initial values for the grid voltage and optimum Exposure Lamp voltage.
Regular Correction	Image density	To compensate for any drop in image density due to a deteriorating PC Drum.	<ul style="list-style-type: none"> • After making the AIDC Sensor contamination correction, the copier produces a solid-black pattern and, through AIDC Sensor control, corrects the grid voltage.
	Gradation	To compensate for any drop in the intensity of LA1 light due to a contaminated optical system.	<ul style="list-style-type: none"> • After making the AIDC Sensor contamination correction, the copier produces a halftone pattern and, through AIDC Sensor control, corrects the optimum Exposure Lamp voltage.
	Foggy background	To keep a given toner-to-carrier ratio of the developer in the Developer Mixing Chamber.	<ul style="list-style-type: none"> • The copier provides toner replenishing control through ATDC Sensor control. (*1)
One-Shot Correction (When the Power Switch is turned ON)	Image density, gradation	To compensate for any drop in surface potential of the PC Drum upon power-up in the morning.	<ul style="list-style-type: none"> • After making the AIDC Sensor contamination correction, the copier produces a solid-black and halftone pattern and, through AIDC Sensor control, corrects the grid voltage and optimum Exposure Lamp voltage.

	Quality	Purpose	Control
Correction for Faulty AIDC Sensor	Image density, gradation	To compensate for image density and gradation aggravated by a faulty AIDC Sensor.	<ul style="list-style-type: none"> The copier corrects the grid voltage and optimum Exposure Lamp voltage according to the time through which the PC Drum has turned and the copier has run.
Correction for Faulty AIDC Sensor	Foggy background	To correct foggy background caused by a faulty AIDC Sensor.	<ul style="list-style-type: none"> The copier provides toner replenishing control through ATDC Sensor control. (*2)

*1, 2: See p.M-69 and onward of "13. DEVELOPING UNIT."

- ◆ The following is the block diagram of the image stabilization system.



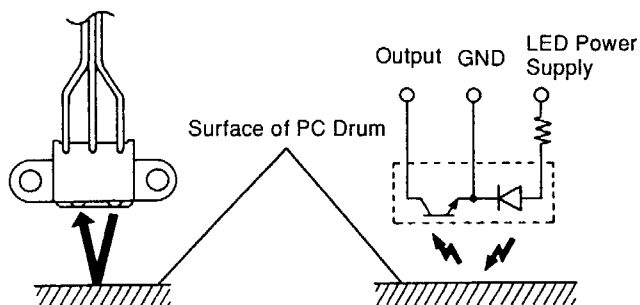
1136M003AA

7-2. AIDC Sensor

To provide image stabilization control, this copier has AIDC Sensor UN3 fitted to the Cleaning Unit of the PC Unit. The sensor is used to detect the toner density and background level on the PC Drum.

Operation

- 1: The UN3's LED projects approx. 940-nm infrared light onto the surface of the PC Drum.
- 2: The UN3's phototransistor detects the amount of light reflected back.
- 3: The phototransistor outputs a voltage corresponding to the intensity of the light reflected back.



1136M068AA

Toner Density	Light reflected	Output
High	Small	High
Low	Large	Low

7-3. AIDC Sensor Control

- There are five processes performed as the AIDC Sensor control:

AIDC Sensor variation adjustment	Optimum Exposure Lamp voltage correction (Exposure correction)
AIDC Sensor contamination correction	AE Sensor gain adjustment
Grid voltage (V _G) correction	

◆ Control of Each Process

[1] AIDC Sensor Variation Adjustment

This adjustment is made since the regular current control cannot cover part-to-part variations in the AIDC Sensor (installation, circuit, deterioration, etc.).

[Control]

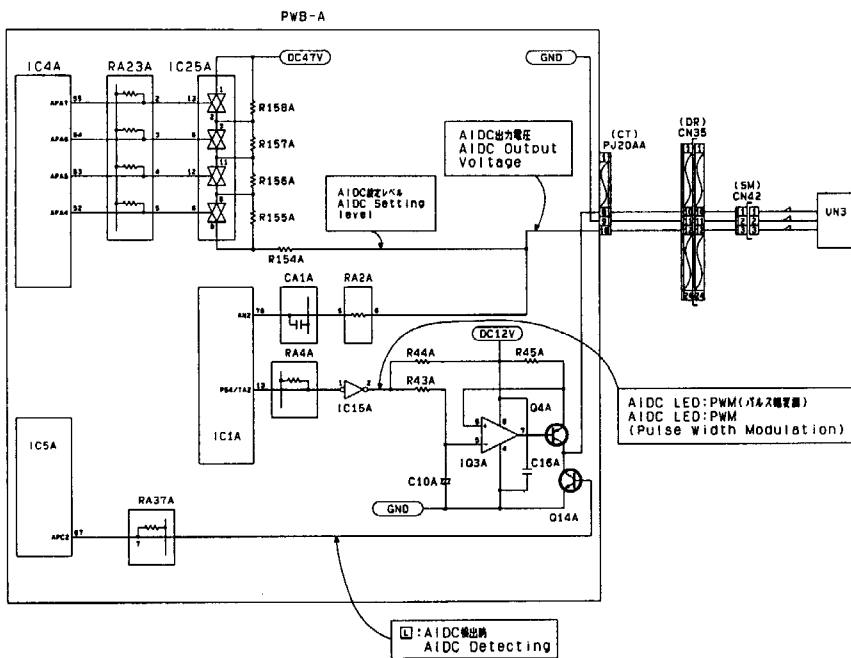
- The AIDC Sensor LED is turned ON to illuminate the erased surface on the PC Drum.
↓
- The 4-bit analog switch selects the load resistance.
↓
- The output voltage from the AIDC Sensor goes through the load resistance selected in the above step and the resultant voltage is applied to Master Board PWB-A.
↓
- The load resistance is switched so that the above voltage becomes 1 V or less, at which time, the analog switch setting is fixed.

[2] AIDC Sensor Contamination Correction

If the Sensor is dirty with toner, it results in an error being produced in the AIDC Sensor output value. The intensity of the AIDC Sensor LED light is therefore varied.

[Control]

- The AIDC Sensor LED is turned ON to illuminate the erased surface on the PC Drum.
↓
- The output voltage from the AIDC Sensor is applied to Master Board PWB-A.
↓
- The current that flows through the AIDC Sensor LED is varied so that the above output voltage becomes 1V. When 1V is obtained, the LED pulse signal is fixed.



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[3] Grid Voltage (V_G) Correction

The following five different types of controls are provided for V_G correction. The copier checks the toner-to-carrier ratio (T/C) before the controls (1), (2), (3) and (4).

If the detected T/C is within level *1, controls (1), (2), (3) and (4) will not run.

*1: Min. (Tech. Rep. mode setting for ATDC) – 2%
Max. 7%

- (1) The grid voltage is adjusted at the initial setup or when the PC Drum has been replaced.

[Control]

- Master Board PWB-A outputs a pulse signal to obtain a grid voltage of 670 V when the first F5 or FF test operation is run after the Drum Counter has been cleared.
- With Exposure Lamp LA1 turned OFF, Image Erase Lamp LA2 is kept OFF for a given period of time to produce a solid-black pattern.
- The AIDC Sensor output voltage is applied to PWB-A.
- The grid voltage is varied so that the above voltage becomes 4.1 V or more, thereby setting the pulse signal for V_G.

- (2) The correction is made to compensate for any drop in the surface potential of a deteriorating PC Drum.

[Control]

- Whenever the cumulative time over which the PC Drum has turned exceeds the level equivalent to 400 copies, PWB-A outputs a pulse signal for the voltage corrected last at the end of the last copy cycle for the above event.
- With LA1 turned OFF, LA2 is kept OFF for a given period of time to produce a solid-black pattern.
- The AIDC Sensor output voltage is applied to PWB-A.
- The grid voltage is varied so that the above voltage falls within the range between 4.1 V and 4.2 V, thereby setting the pulse signal for V_G.

- (3) The correction is made to compensate for any drop in the surface potential of a cold PC Drum immediately after the copier is turned ON in the morning.

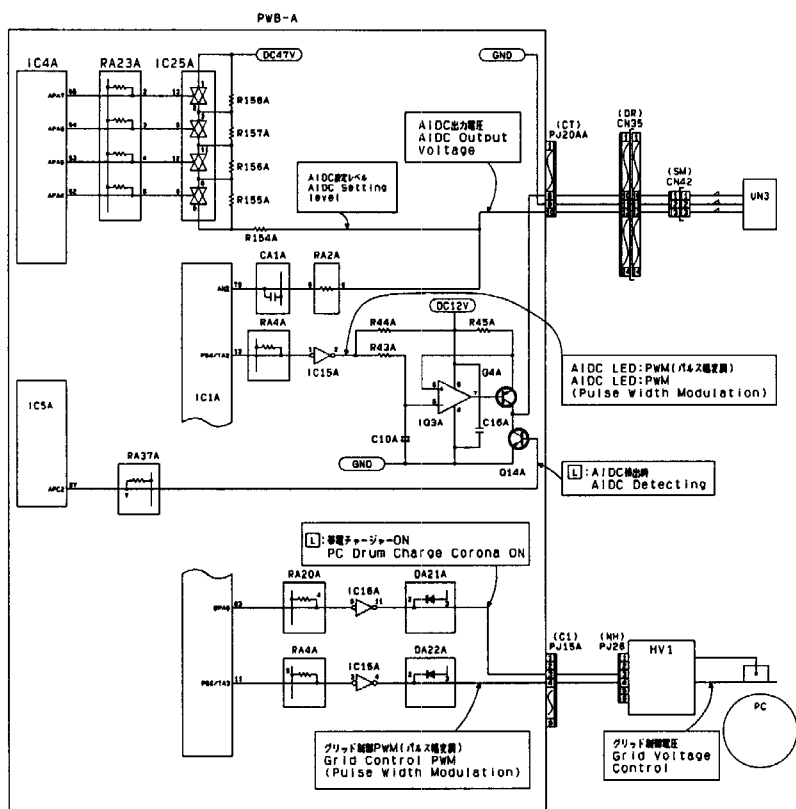
[Control]

- During predrive after the Power Switch has been turned ON, PWB-A outputs a pulse signal for the voltage corrected last.
- With LA1 turned OFF, LA2 is kept OFF for a given period of time to produce a solid-black pattern.
- The AIDC Sensor output voltage is applied to PWB-A.
- The grid voltage is varied so that the above voltage becomes 4.1 V or more, thereby setting the pulse signal for V_G.

- (4) The one-shot correction is canceled as the inside temperature of the copier rises.

[Control]

- Upon completion of the copy cycle for every 100 copies made after the Power Switch has been turned ON, PWB-A outputs a pulse signal for the corrected voltage before one-shot correction.
 - With LA1 turned OFF, LA2 is kept OFF for a given period of time to produce a solid-black pattern.
 - The AIDC Sensor output voltage is applied to PWB-A.
 - These operations are repeated at every 100 copies made until the above voltage becomes 4.1 V or more. If, however, 600 or more copies are made or a standby period of 120 minutes or more elapses after the Power Switch has been turned ON, the one-shot correction is canceled.
- (5) A correction is made by increasing the grid voltage by 30 V each time the cumulative time over which the PC Drum has turned exceeds 1,500 minutes if the copier has previously determined that the AIDC Sensor is faulty.



[4] Optimum Exposure Lamp Voltage Correction (Exposure Correction)

The following five different types of controls are provided for the optimum Exposure Lamp voltage correction. The copier checks the T/C before the controls (1), (2), (3) and (4). If the detected T/C is within level *1, controls (1), (2), (3) and (4) will not run.

*1: Min. (Tech. Rep. mode setting for ATDC) – 2%
Max. 7%

- (1) The optimum Exposure Lamp voltage is adjusted at the initial setup or when the PC Drum has been replaced.

[Control]

- PWB-A outputs a pulse signal to obtain an optimum Exposure Lamp voltage of 60 V when the first F5 or FF test operation is run after the Drum Counter has been cleared.
↓
- LA1 is turned ON to illuminate the halftone patch on the back of the Original Width Scale and LA2 is kept OFF for a given period of time to produce a halftone pattern.
↓
- The AIDC Sensor output voltage is applied to PWB-A.
↓
- The Exposure Lamp voltage is varied according to the difference between the above voltage and the target median. (This is done by changing the pulse signal for the Exposure Lamp voltage.)

- (2) The correction is made when the F5 test operation is run after the Exposure Lamp has been cleaned or the SCH-70 (Exposure Lamp voltage adjustment) setting changed.

[Control]

- When the second or subsequent F5 test operation is run, PWB-A outputs a pulse signal for the Exposure Lamp voltage set at the last exposure correction.
↓
- LA1 is turned ON to illuminate the halftone patch on the back of the Original Width Scale and LA2 is kept OFF for a given period of time to produce a halftone pattern.
↓
- The AIDC Sensor output voltage is applied to PWB-A.
↓
- The Exposure Lamp voltage is varied according to the difference between the above voltage and the target median. (This is done by changing the pulse signal for the Exposure Lamp voltage.)

-
- (3) The correction is made to compensate for any drop in the reduced intensity of LA1 light occurring due to a contaminated optical system.

[Control]

- Whenever the cumulative time over which the copier has run exceeds the level equivalent to 5 K copies, PWB-A outputs a pulse signal for the Exposure Lamp voltage corrected last at the end of the last copy cycle for the above event.
↓
 - LA1 is turned ON to illuminate the halftone patch on the back of the Original Width Scale and LA2 is kept OFF for a given period of time to produce a halftone pattern.
↓
 - The AIDC Sensor output voltage is applied to PWB-A.
↓
 - The Exposure Lamp voltage is varied so that the above voltage will fall within the target range. (This is done by changing the pulse signal for the Exposure Lamp voltage.)
- (4) A correction is made for the intensity of LA1 light equivalent to the changes made in V_G by one-shot correction.

[Control]

- After V_G has been corrected in one-shot correction, PWB-A outputs a pulse signal for the Exposure Lamp voltage set at the last exposure correction.
↓
- LA1 is turned ON to illuminate the halftone patch on the back of the Original Width Scale and LA2 is kept OFF for a given period of time to produce a halftone pattern.
↓
- The AIDC Sensor output voltage is applied to PWB-A.
↓
- The Exposure Lamp voltage is varied so that the above voltage will fall within the target range. (This is done by changing the pulse signal for the Exposure Lamp voltage.)

- [illegible]

M-21

[5] AE Sensor Gain Adjustment

The following two different types of controls are provided for the AE Sensor gain adjustment.

- (1) The AE Sensor gain is adjusted when the F5 or FF test operation is run.

[Control]

- When the F5 or FF test operation is run, the Exposure Lamp is turned ON to illuminate a blank sheet of paper placed on the Original Glass with an optimum Exposure Lamp voltage.
↓
- The AE Sensor output voltage is applied to PWB-A.
↓
- The AE Sensor gain is varied so that the above voltage becomes $1.8 \text{ V} \pm 0.05$, thereby setting the pulse signal for the gain.
↓
- The Exposure Lamp is turned ON to illuminate the halftone patch on the back of the Original Width Scale with the optimum Exposure Lamp voltage.
↓
- The AE Sensor output voltage is applied to PWB-A and stored in memory.

- (2) The AE Sensor gain is corrected as necessary according to the Exposure Lamp voltage changed as a result of "exposure correction."

[Control]

- After the "exposure correction" has been made, the Exposure Lamp is turned ON to illuminate the halftone patch on the back of the Original Width Scale with the optimum Exposure Lamp voltage.
↓
- The AE Sensor output voltage is applied to PWB-A.
↓
- The AE Sensor gain is adjusted so that the above voltage becomes the voltage value stored in memory when F5 was run.

◆ Control Processing Timing

- ①: AIDC Sensor variation adjustment
- ②: AIDC Sensor contamination correction
- ③: VG correction
- ④: Exposure correction
- ⑤: AE Sensor gain adjustment

O: Performed
-: Not performed

		Processing				
Condition	Timing	①	②	③	④	⑤
Initial setting	At the initial setup, or when the first F5 or FF test operation is run after the PC Drum has been replaced.	O	O	O	O	O
	The second or subsequent F5 test operation is run when the manual Exposure Lamp voltage adjustment setting (available from Tech. Rep. Choice) is changed or the Exposure Lamp cleaned.	O	O	-	O	O
Regular correction	The cumulative time over which the PC Drum has turned reaches a level equivalent to 400 copies.	If further correction is necessary after ②	O	O	If VG has been varied by ③	If the exposure level has been varied by ④
	The cumulative time over which the copier has run reaches a level equivalent to 5 K copies.	If further correction is necessary after ②	O	-	O	If the exposure level has been varied by ④
One-Shot Correction (When the Power Switch is turned ON)	During predrive after the Power Switch has been turned ON (one-shot correction).	If further correction is necessary after ②	O	O	If VG has been varied by ③	If the exposure level has been varied by ④
	The copier has made 100 copies after the Power Switch has been turned ON (one-shot correction canceled).	If further correction is necessary after ②	O	O	-	-

O: Performed
 -: Not performed

		Processing				
Condition	Timing	①	②	③	④	⑤
When the AIDC Sensor is faulty	The grid voltage is increased by 30 V each time the cumulative time over which the PC Drum has turned reaches 1,500 minutes.	-	-	- *1	- *2	O
	The optimum Exposure Lamp voltage is increased by 1 V each time the cumulative time over which the copier has run reaches 700 minutes.	-	-	-	- *3	O

- *1: V_G is corrected, not by the AIDC Sensor, but according to the time over which the PC Drum has turned.
- *2: If V_G has been corrected by *1, the corresponding exposure level is also changed.
- *3: The optimum Exposure Lamp voltage is corrected, not by the AIDC Sensor, but according to the time over which the copier has run.

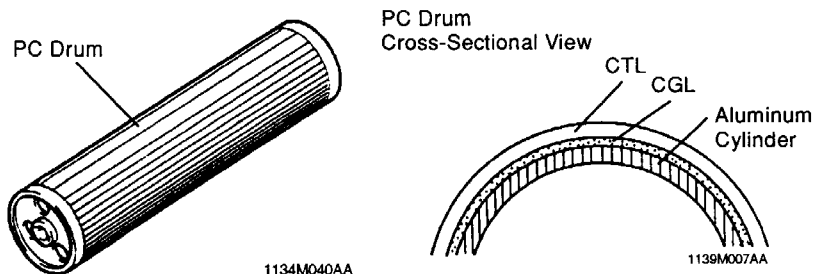
8 PC DRUM

8-1. PC Drum

- * The photoconductive drum used in this copier is the organic photoconductor (OPC) type.
- * The drum is made up of two distinct, semiconductive materials on an aluminum alloy base. The outer of the two layers is called the Charge Transport Layer (CTL), while the inner layer is called the Charge Generating Layer (CGL).
- * The PC Drum measures $\phi 80 \text{ mm} \times 350 \text{ mm}$.

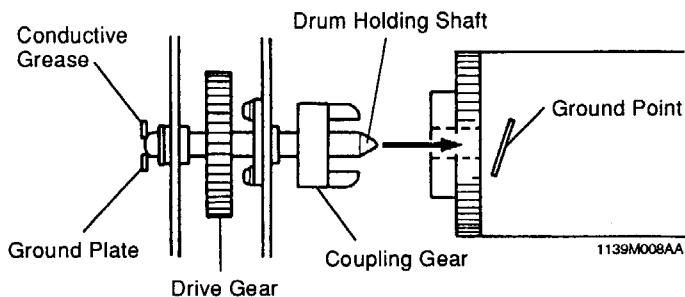
Handling Precautions

- This photoconductor exhibits greatest light fatigue after being exposed to light over an extended period of time. It must therefore be protected from light by a clean, soft cloth whenever the PC Unit has been removed from the copier.
- Further, use utmost care when handling the PC Drum to prevent it from being contaminated.



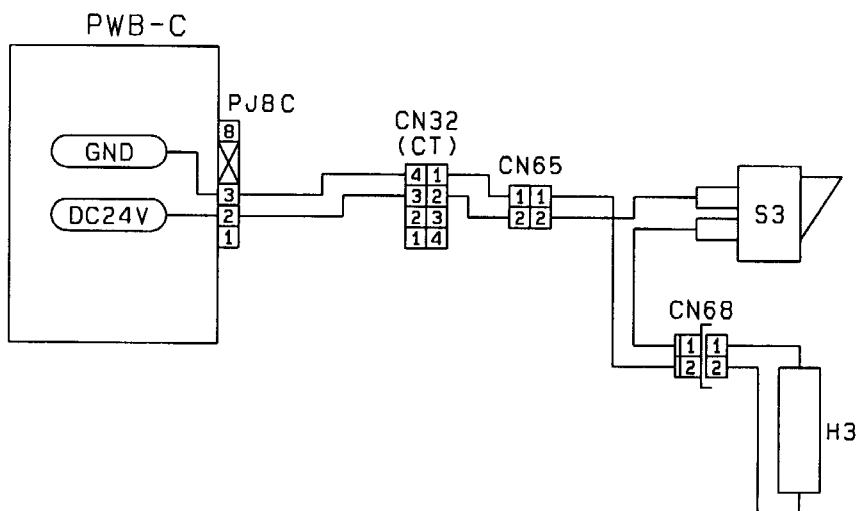
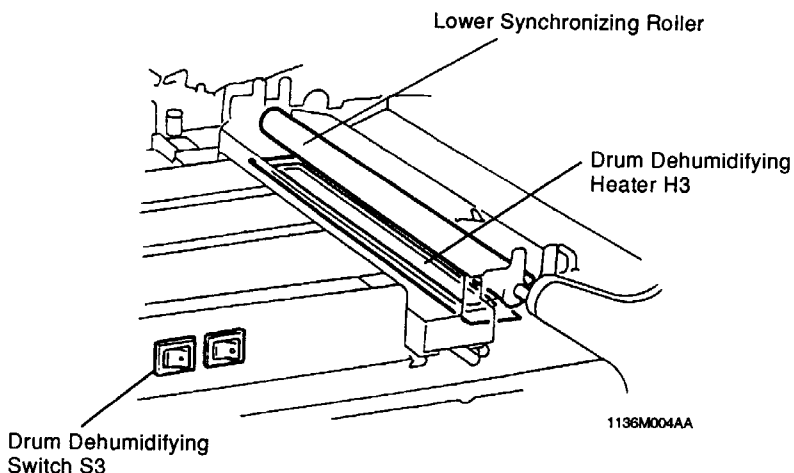
8-2. Drive and Grounding for the PC Drum

- * When the PC Unit is slid into the copier, the Coupling Gear, driven by a timing belt and gear from Main Drive Motor M1, is engaged with the flange of the PC Drum. This connects the drive train for the PC Drum.
- * The PC Drum is grounded to the frame of the copier through the Ground Point inside the rear of the PC Drum and the Drum Holding Shaft. When the PC Unit is slid into the copier, the Drum Holding Shaft contacts the Ground Point inside the PC Drum. This provides for assured grounding of the PC Drum. Conductive grease has been applied to the Ground Point.



8-3. Drum Dry Heater

- Drum Dehumidifying Heater H3 is located under the Lower Synchronizing Roller. It is a panel heater that prevents condensation from forming on the surface of the PC Drum.
- H3 operates when:
 - * The power cord is plugged into the wall outlet.
 - * Power Switch S1 is in the OFF position.
 - * Drum Dehumidifying Switch S3 is in the ON position.

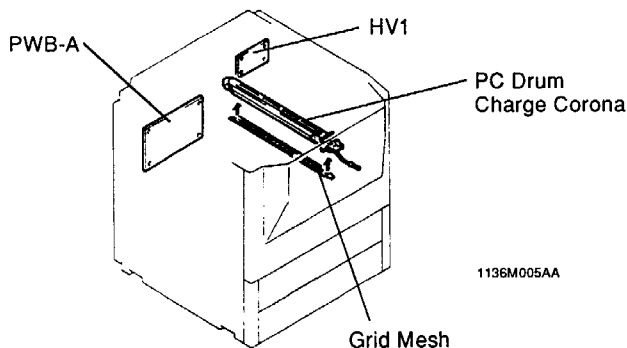


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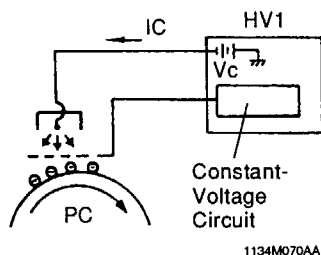
9 DRUM CHARGING

9-1. PC Drum Charge Corona

- The PC Drum Charge Corona in this copier is equipped with a Scorotron Grid which ensures that a DC negative charge is evenly deposited across the entire surface of the PC Drum.
- The grid voltage applied to the Grid Mesh of the PC Drum Charge Corona is varied to compensate for any drop in V_0 which could occur with age or under low temperatures in the morning. This ensures stabilized image quality. (For more details, see "7. IMAGE STABILIZATION SYSTEM.")
- The Constant-Voltage Circuit in High Voltage Unit HV1 maintains the grid voltage in the range between DC-550V and DC-850V according to the Grid Control pulse (PWM) output from Master Board PWB-A.
- The corona unit is provided with a mechanism that takes up a given amount of the corona wire at a given timing to prevent uneven charging caused by a dirty wire.



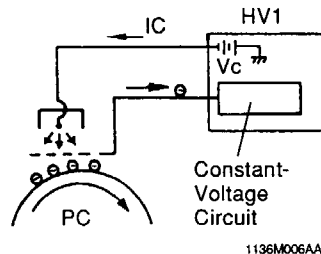
<How Scorotron Works>



When High Voltage Unit HV1 turns ON, a corona emission from the Corona Wire begins.

A grid voltage according to the Grid Control pulse is being applied to the Grid Mesh.

Since there is a potential difference between the Grid Mesh and PC Drum, the negative charges of the corona emission flow through the Grid Mesh to the surface of the PC Drum. This results in the surface being negatively charged.



When the potential of the Grid Mesh becomes equal to that of the PC Drum (i.e., when the potential of the PC Drum becomes the grid voltage set by the Grid Control pulse), the negative corona current flows from the Grid Mesh through HV1 to the ground.

9-2. Control of the PC Drum Charge Corona

- The PC Drum Charge Corona is turned ON and OFF by the Drum Charge/Image Transfer Corona ON signal output from pin 83 (BPA5) of IC4A. The Grid Control pulse signal is output after the Power Switch has been turned ON.

<Operation>

The Image Erase Lamp LA2 MODE signal is output.

↓ Approx. 200 msec. later

Master Board PWB-A

The LOW Drum Charge/Image Transfer Corona ON signal is output from pin 83 (BPA5) of IC4A.

↓

The Drum Charge/Image Transfer Corona output from High Voltage Unit HV1 is turned ON.



Paper Exit Switch S53 is actuated (when the trailing edge of the paper moves past S53).

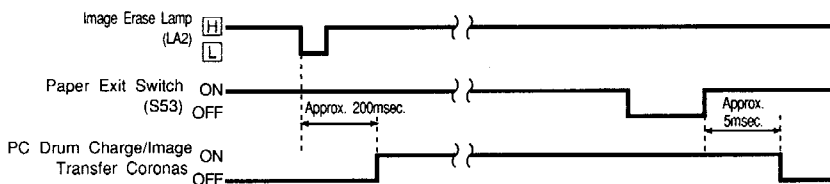
↓ Approx. 5 msec. later

Master Board PWB-A

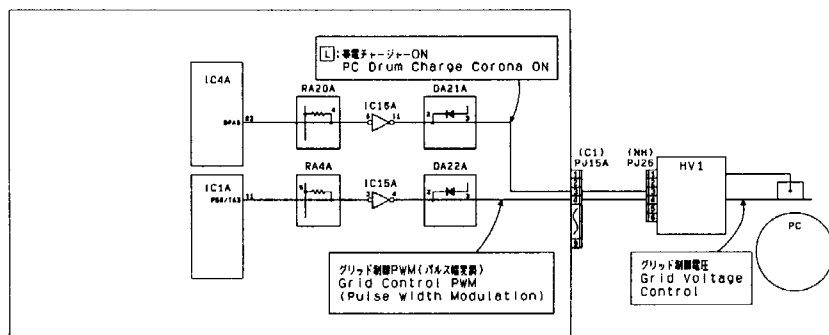
The HIGH Drum Charge/Image Transfer Corona ON signal is output from pin 83 (BPA5) of IC4A.

↓

The Drum Charge/Image Transfer Corona output from HV1 is turned OFF.



1134T253MCA

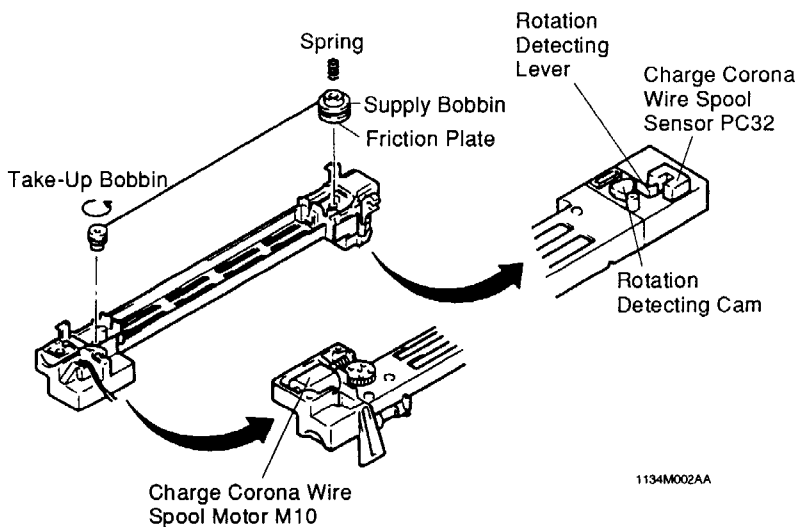


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9-3. PC Drum Charge Corona Wire Take-Up Mechanism/Control

(1) Corona Wire Take-Up Mechanism

- The PC Drum Charge Corona Wire is 3,900 mm long. One end of the wire is fixed and wound around the Supply Bobbin, while the other end fitted to the Take-Up Bobbin. The wire is taken up by the Take-Up Bobbin as Charge Corona Wire Spool Motor M10 turns.
- To give tension and apply brake to the corona wire, the Supply Bobbin is provided with a friction plate and a spring.
- The speed of the Supply Bobbin is detected as follows. The shaft of the Supply Bobbin is provided with a rotation detecting cam and lever which activate and deactivate Charge Corona Wire Spool Sensor PC32.



1134M002AA

(2) Corona Wire Take-Up Control

Charge Corona Wire Spool Motor M10 is energized and deenergized by the signal output from pin 72 (APC7) of IC4A on Master Board PWB-A. The time during which M10 is kept energized is controlled by counting the number of pulses fed by Charge Corona Wire Spool Sensor PC32.

<Take-Up Timings>

The corona wire is taken up at the following three timings.

A: Regular take-up

- When the Wire Take-Up Cycle Counter (an internal counter) reaches 20K, M10 is energized for 16 pulses, which results in the wire being taken up a length of about 335 mm.
- The precise timing is 10 min. (during which period no copy cycle is run) after drive has been stopped following the completion of the copy cycle in which the Counter counted 20K.

B: One-shot take-up

- When the function "Advance Charge Wire" of "System Input" available from the Tech. Rep. mode menu is invoked, M10 is energized for 5 pulses, which results in the wire being taken up a length of about 104 mm.

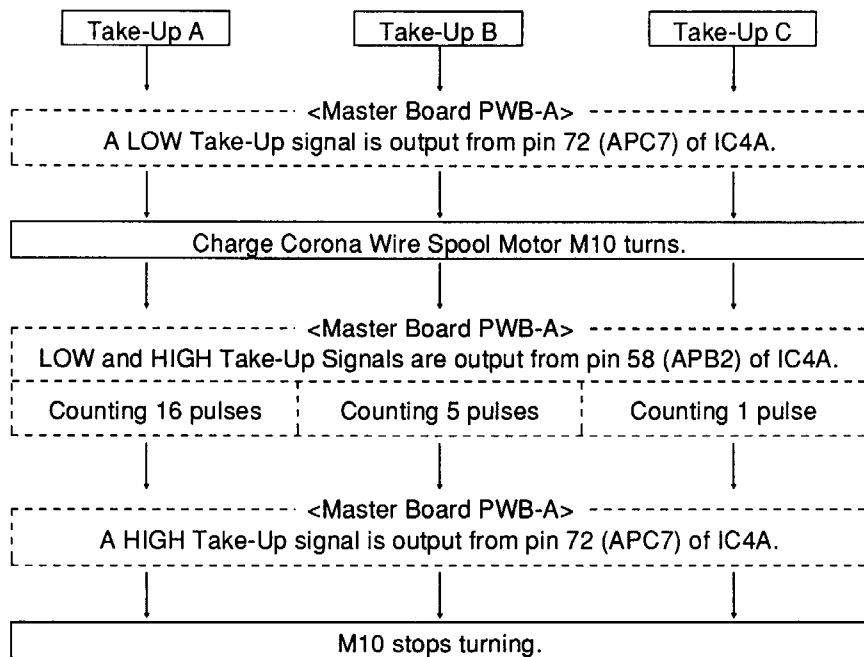
C: Initial take-up

- When "Charge Wire" of the "Port/Option" counters available from the Tech. Rep. mode menu is cleared after the corona wire has been replaced, M10 is energized for 1 pulse, which results in the wire being taken up a length of about 21 mm.

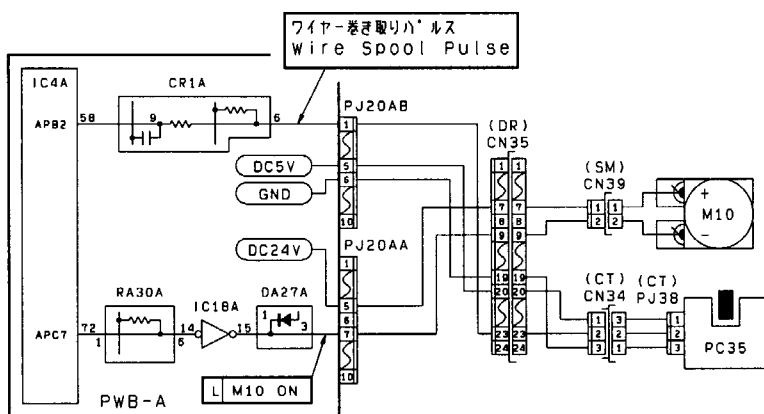
<Protection Against a Wire-Empty Condition>

- Since the corona wire take-up mechanism is not provided with a system to detect a wire-empty condition, the "Charge Wire" counter of the "Port/Option" counters must be checked to determine when to replace the corona wire. To give protection against a wire-empty condition, M10 is disabled when the cumulative number of M10 pulses reaches 150.
- The value given for the "Charge Wire" counter is obtained by converting the number of wire take-up pulses into the corresponding number of copies. The wire needs replacement when the counter reads a number ranging from 161 to 185.
- The wire take-up sequence can occur 8 times, which is equivalent to a counter count of 161K (129 cumulative pulses) and 180K copies (with no one-shot take-ups being made).

<Operation>



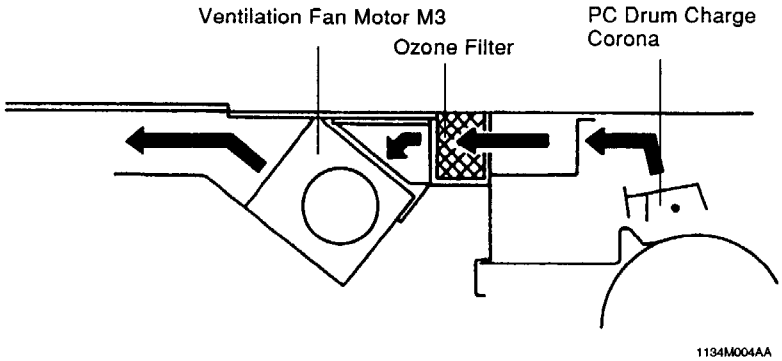
*: The copier CPU keeps track of the cumulative number of pulses. When the count reaches 150, the Take-Up signal remains HIGH, disabling M10. Clear this cumulative counter for resetting.



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9-4. Ozone Filter

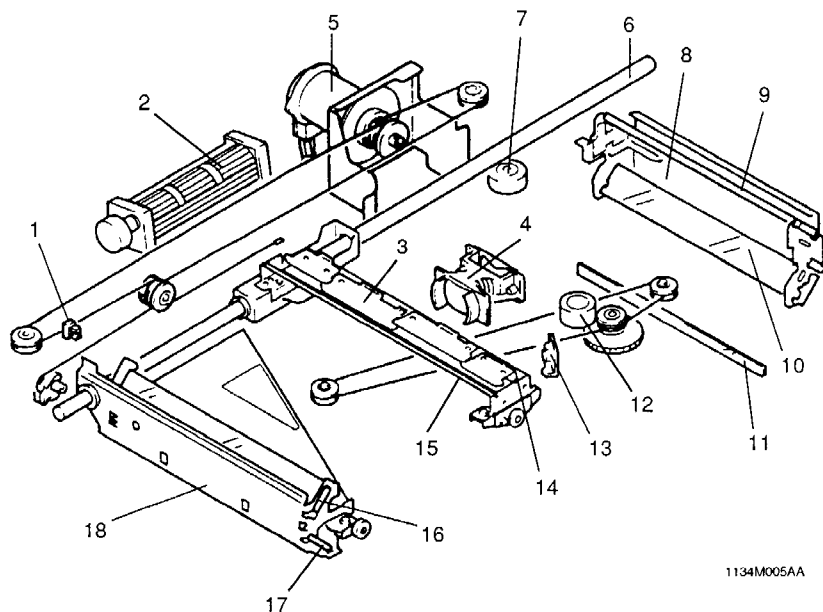
- Ozone produced by the PC Drum Charge Corona is absorbed by the Ozone Filter located to the left of the PC Drum Charge Corona, as the air is drawn out of the copier by Ventilation Fan Motor M3.



10 OPTICAL SECTION

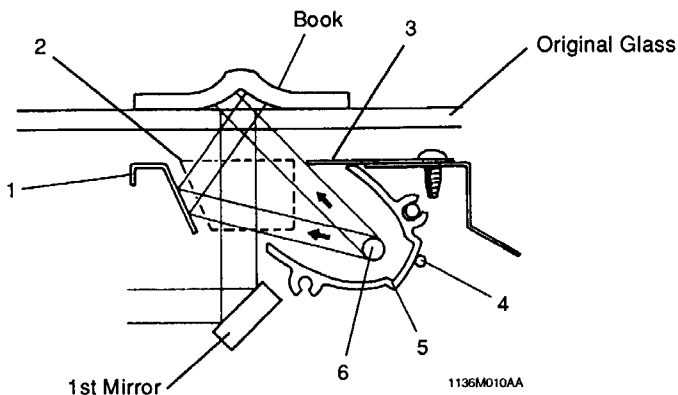
10-1. Construction

- As the Scanner is moved by Scanner Motor M2, the light from Exposure Lamp LA1 is reflected off the original and guided through the six Mirrors onto the surface of the PC Drum to form the electrostatic latent image.



- | | |
|---|------------------------------|
| 1. Scanner Reference Position Sensor PC81 | 10. 5th Mirror |
| 2. Original Glass Cooling Fan Motor M5 | 11. 6th Mirror |
| 3. Scanner | 12. Lens Motor M6 |
| 4. Lens | 13. AE Sensor Board PWB-H |
| 5. Scanner Motor M2 | 14. Exposure Lamp LA1 |
| 6. Scanner Shaft | 15. 1st Mirror |
| 7. Mirror Motor M7 | 16. 2nd Mirror |
| 8. 4th/5th Mirrors Carriage | 17. 3rd Mirror |
| 9. 4th Mirror | 18. 2nd/3rd Mirrors Carriage |

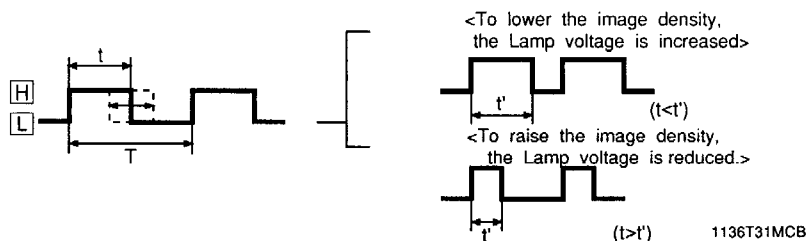
10-2. Exposure



1. Auxiliary Reflector : The Auxiliary Reflector reflects light onto the areas that Exposure Lamp LA1 cannot illuminate when an original that does not lie flat on the Original Glass (such as a book) is being used. It functions to reduce shadows which would otherwise be transferred to the copy.
2. Intensity Correction Mirror : The intensity of the light emitted by LA1 remains flat. The intensity is slightly attenuated at the very ends, which is corrected by the Intensity Correction Mirrors fitted on the front and rear ends of the Scanner.
3. Aperture Plates : The four Aperture Plates regulate the amount of LA1 light illuminating the original surface.
4. Exposure Lamp Thermal Fuse TF2 : Exposure Lamp Thermal Fuse TF2 becomes electrically open (blows) if the temperature in the area surrounding the Main Reflector exceeds 128°C, thus cutting off the circuit to LA1.
5. Main Reflector : The Main Reflector ensures that light from LA1 exposes all areas of the original.
6. Exposure Lamp LA1 : This copier uses a halogen frost lamp for Exposure Lamp LA1. Its light distribution characteristics keep the intensity of the light remaining flat.

10-3. Exposure Lamp Control

- The voltage applied to Exposure Lamp LA1 is controlled by changing the duty ratio of the pulse width of the Exposure Lamp Control signal (AVR PWM) output from Master Board PWB-A.
- For possible contamination of the Optical System and to incorporate any correction made in the grid voltage, the copier automatically varies the optimum intensity of the Exposure Lamp light and adjusts AE Sensor gain to ensure stabilized image quality. (See "7. IMAGE STABILIZATION SYSTEM.")

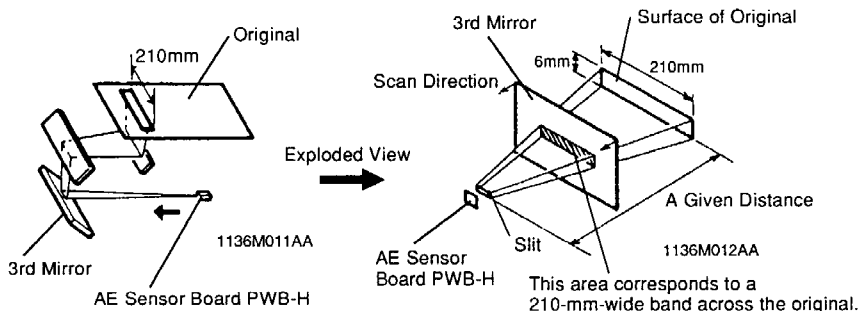


$$\text{Duty Ratio (\%)} = \frac{\text{Period } T - \text{Pulse Width } t}{\text{Period } T}$$

(1) Automatic Exposure Control

<Overview>

- The copier is provided with the Auto Exposure mode in which the voltage applied to Exposure Lamp LA1 is automatically increased or decreased as necessary so that copies of consistent quality are produced regardless of whether, for example, the original has a dark background or is a pencil line drawing.
- AE Sensor Board PWB-H (beside the Lens) measures the intensity of the light reflected off the 3rd Mirror, which results in the black/white ratio of an area of 210 mm (W) × 6 mm (L) of the original being measured. As the original is being scanned in the Auto Exposure mode, PWB-H senses the image density of the original (or the intensity of the light reflected) on a real-time basis.
- In this mode, the copier either increases or decreases the Exposure Lamp voltage according to the difference between the AE Sensor output and reference voltage during the period between when the Image Leading Edge signal (BASE) is output and when LA1 is turned OFF.



<Operation>

Master Board PWB-A

A pulse signal is sent from pin 17 (P50/TA1) of IC1A to light up LA1 for the center manual exposure setting (EXP5). A LOW Exposure Lamp ON signal is output from pin 49 (APA1) of IC4A.



Power Supply Unit PU2

The pulse signal is input to pin 3 of PJ19 and PU2 sets the Lamp voltage according to that signal.



LA1 turns ON.



During the copy cycle, a LOW Image Leading Edge signal (BASE) is output and the automatic exposure control begins.



AE Sensor Board PWB-H

PD1H detects the intensity of the light striking it and PWB-H converts the light intensity to a corresponding voltage value, outputting it via pin 7 of IC1H. (The higher the intensity of the light striking PD1H, the lower the output voltage.)



Master Board PWB-A

The analog voltage from PWB-H is input to pin 1 (AN0) of IC1A.



PWB-A compares the input voltage with the reference voltage and increases the Lamp voltage if the input voltage is higher than the reference, and decreases it if the input is lower than the reference. This is accomplished by varying the duty ratio of the pulse signal output from pin 17 (P50/TA0) of IC1A.

- * The reference voltage value varies depending on the "Expo. Level Priority (Auto Mode)" setting of the User's Choice. It also depends on the optimum Exposure Lamp voltage under that setting.

Optimum Exposure Lamp Voltage Choice	56V or Less	57V to 63V	64V or More
Lighter	1.45	1.53	1.59
Normal	1.80	1.80	1.80
Darker	2.15	2.07	2.01

(Unit: V)

(2) Manual Exposure Control

- When either one of the Exposure Control Keys (Lighter and Darker) on the Touch Panel is touched, it sets the copier into the Manual Exposure mode. In this mode, the copier permits the user to vary the Lamp voltage (i.e. the exposure level) in nine different steps.

<Operation>

Touch the Exposure Control Key as necessary.

Master Board PWB-A

The exposure level data is sent from the control panel to IC1A via MSC Board PWB-B through MINET communications.

The exposure level data is then converted in IC1A to a pulse signal and output from pin 17 (P50/TA0) of IC1A. A LOW Exposure Lamp ON signal is output from pin 49 (APA1) of IC4A.

Power Supply Unit PU2

The pulse signal is input to pin 3 of PJ19. According to this signal, PU2 sets the Lamp voltage (which can be varied in nine steps according to the exposure setting.)

The intensity of the light emitted by Exposure Lamp LA1 becomes greater or smaller accordingly.

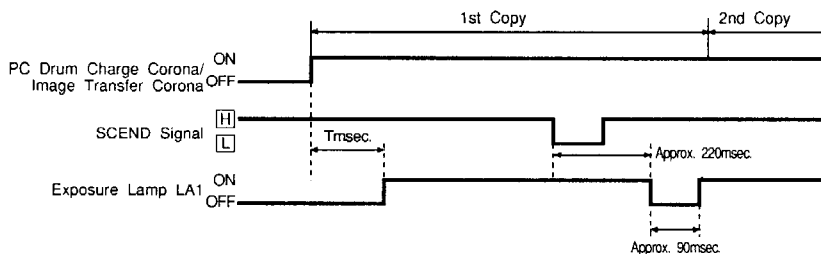
(3) Exposure Lamp LA1 ON/OFF Control

◆ Exposure Lamp ON Timing

- Exposure Lamp LA1 is turned ON T msec. after the PC Drum Charge Corona and Image Transfer Corona have been turned ON following the press of the Start Key. The Lamp ON timing varies for each different paper source.
- During a multi-copy cycle, LA1 is turned ON again approx. 90 msec. after it has been turned OFF.

◆ Exposure Lamp OFF Timing

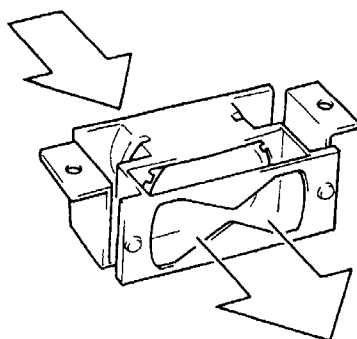
- LA1 is turned OFF approx. 220 msec. after the SCEND signal, which is being input to Master Board PWB-A from SCP Board PWB-J, has gone from HIGH to LOW.





10-4. Intensity Correction

- (1) Because of the nature of the Lens, the intensity of the Exposure Lamp light after passing through the Lens tends to be higher at the center and lower towards both ends. To solve this problem, there is a Lens Aperture Cover installed at the back of the Lens. It limits the amount of light at the center to ensure that an even amount of light strikes the surface of the PC Drum.



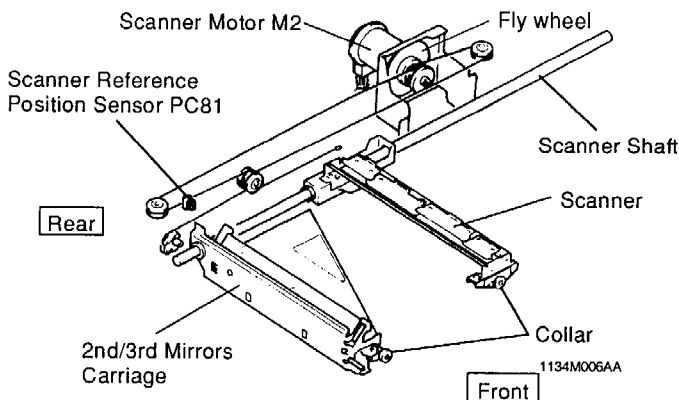
113GM013AA

- (2) When a zoom ratio is large, it results in the intensity of light striking the surface of the PC Drum decreasing. To correct the varying intensity of the light striking the surface of the PC Drum in different zoom ratios, the Lamp voltage is increased according to the set zoom ratio in the Manual Exposure mode and a correction is made for the AE Sensor input voltage to increase the Lamp voltage in the Auto Exposure mode.

Zoom Range	Manual Exposure Correction Coefficient	Auto Exposure Correction Coefficient
	Lamp Voltage (V)	Equivalent Lamp Voltage (V)
0.500~0.549	+2	+2
0.550~0.949	+1	+1
0.950~1.099	±0	±0
1.100~1.399	+1	+1
1.400~1.749	+2	+2
1.750~2.000	+4	+4

10-5. Scanner and 2nd/3rd Mirrors Carriage Moving Mechanism

- The Scanner and the 2nd/3rd Mirrors Carriage are driven by Scanner Motor M2 through the Scanner Drive Cable, in the rear.
- Both the Scanner and 2nd/3rd Mirrors Carriage slide along the Scanner Shaft in the rear of the copier. While at the front end, there is a Slide Collar attached to each of the bodies and that Collar slides over the Slide Rail. The speed of the Scanner varies with different zoom ratios (270.0 mm/second in the full size mode).
- Scanner Reference Position Sensor PC81 detects the home position of the Scanner. It determines the reference position for the scan motion.



10-6. Scanner Motor M2 Control

<Overview>

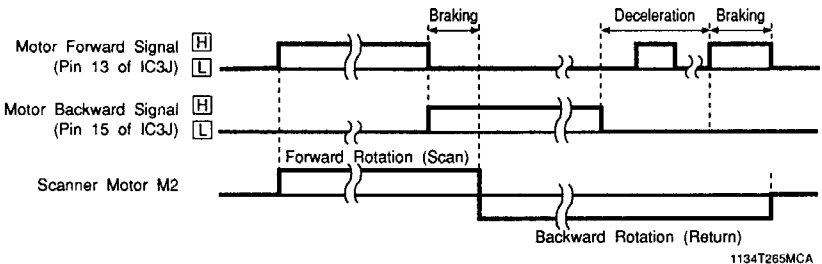
- A DC servomotor is used for Scanner Motor M2. The pulse width modulation, or PWM, control is employed in which the average voltage is controlled by varying the width of the Scanner drive pulse which is the voltage input to the Motor.
- A photosensor and a pulse disk are built into M2. Their function is to convert the Motor shaft speed into the corresponding series of pulses. This pulse signal is input to SCP Board PWB-J.
- PWB-J then calculates the Motor speed using the period of the pulse signal applied to it and controls the Scanner drive pulse which is to be applied to the Motor. This effectively stabilizes the Motor speed.
- The pulse signal applied to PWB-J is also used to determine the distance over which the Scanner should travel. This distance is represented by the number of pulses corresponding to each paper size and zoom ratio.
- The flywheel mounted on M2 smooths out the rotation of the motor.

<Scan/Return Switching and Braking of Scanner Motor M2>

- Scanner Motor M2 is turned forward to move the Scanner in the scan direction, turned backward to move the Scanner in the return direction, or braked by the Motor Forward and Motor Backward signals input from pins 13 and 15 of IC3J on SCP Board PWB-J. Details are as follows.

	Motor Forward Signal (Pin 13 of IC3J)	Motor Backward Signal (Pin 15 of IC3J)
Turns Forward	[H]	[L]
Turns Backward	[L]	[H]
Braked (in Scan Motion)	[L]	[H]
Braked (in Return Motion)	[H]	[L]

- The brake control in the return motion is provided as follows, since M2 builds up its speed to the maximum level during the return motion. The Motor Backward signal is first alternated between HIGH and LOW states to reduce the input voltage to M2 to a low level. After M2 is decelerated to a given speed through this operation, the above brake control is performed.



<Scanner Speed Control>

- The speed of M2 is controlled by varying the width of the Scanner drive pulse which is output from pin 38 of IC2J on SCP Board PWB-J. (This means that the current flowing through M2 is varied.)

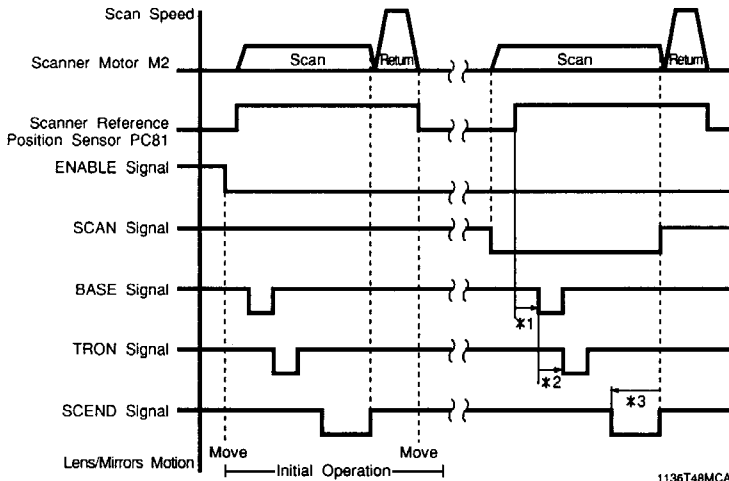
Scanner Drive Pulse (Pin 38 of IC2J) Output Waveform	
High-Speed Rotation	<p>1136T34MCA</p>
Low-Speed Rotation	<p>1136T35MCA</p>

<Scan/Return Motion>

◆ These are the signals used during the scan and return motion:

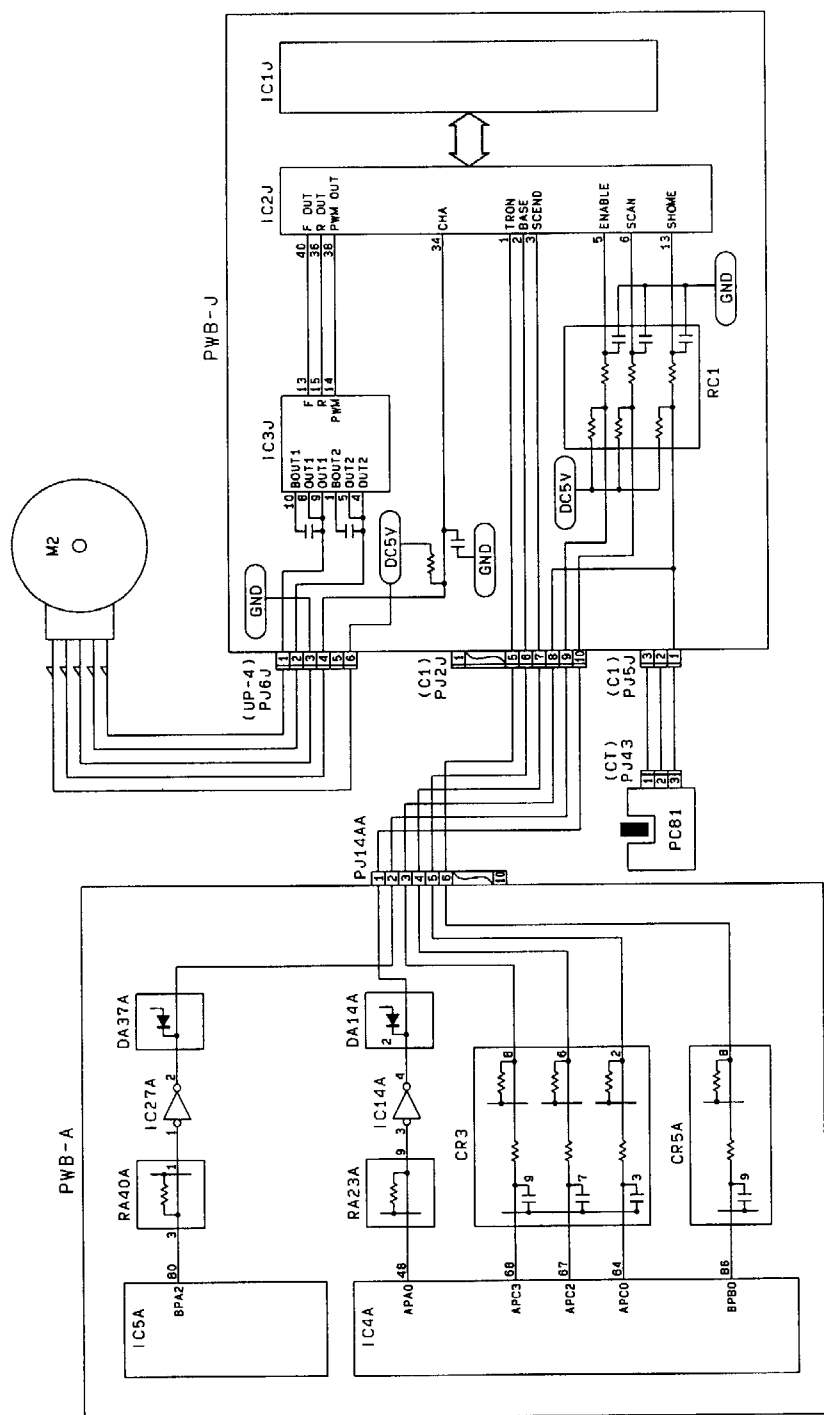
- **ENABLE signal** : Input from the master CPU to SCP. Enables the operation of each load of the optical system when LOW and disables the operation of all loads when HIGH.
- **SCAN signal** : Input from the master CPU to SCP and requests a scan motion when LOW.
- **BASE signal** : Input from the SCP to master CPU and indicates the image leading edge position. Serves also as the reference for setting the scan length.
- **TRON signal** : Input from the SCP to master CPU and controls the start of the Synchronizing Roller when LOW.
- **SCEND signal** : Input from the SCP to master CPU and gives an advance notice of the completion of a scan motion when LOW.
- **SHOME signal** : Input from Scanner Reference Position Sensor PC81 to SCP and detects the Scanner at the home position when LOW. Serves also as the reference for a scan motion.

◆ Here is the timing chart for scan and return motions.



1136T48MCA

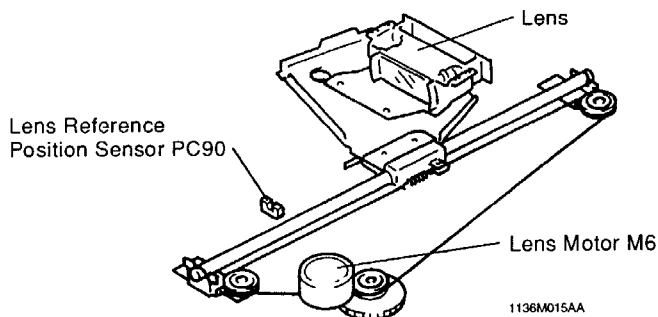
- *1 : The LOW BASE signal is output after a given distance is traveled after the PC81 output has gone HIGH.
- *2 : The LOW TRON signal is output after the lapse of a given period of time plus correction [A-4 (Lens Position Full Size), A-5 (Lens Position Reduction), and A-11 (Lens Position Enlargement) of Adjust mode] after the BASE signal has gone LOW.
- *3 : The LOW SCEND signal is output approx. 200 msec. before the Scanning finish.



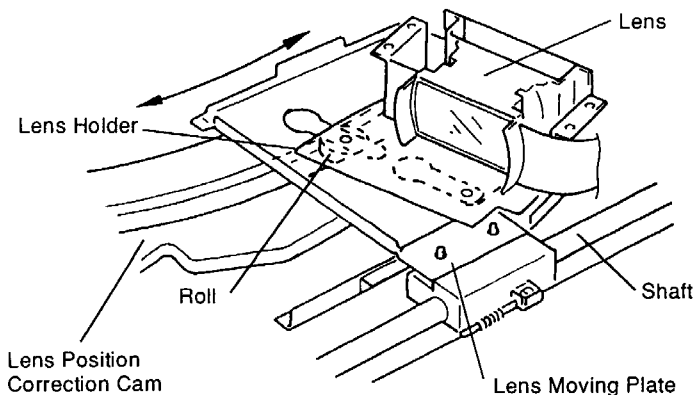
10-7. Lens Drive Mechanism/Control

(1) Lens Drive Mechanism

- The Lens is moved by the Lens Drive Cable to which drive is transmitted from Lens Motor M6.
- A two-phase stepping motor is used for M6. The Motor is turned forward or backward by the pulse signals output from SCP Board PWB-J, thus moving the Lens in either the reduction or enlargement direction.
- When a zoom ratio is selected, pulse signals from PWB-J are input to the Lens Motor. The Motor's shaft turns 7.5° per step, which is equivalent to approx. 0.2 mm of linear Lens movement.



- In this copier, registration for the original is determined at the rear left corner, while that for the PC Drum is at the front side. For this reason, there is a Lens Position Correction Cam that moves the Lens slantwise.
- The Lens Moving Plate moves linearly on a shaft, while the Lens Holder is movable on the Lens Moving Plate.
- The one roll of the Lens Holder is fitted in the groove of the Lens Position Correction Cam via slits in the Lens Moving Plate. This means that the Lens Holder moves along a curved trajectory which is drawn by the Lens Position Correction Cam, though the Lens Moving Plate makes a linear motion.



(2) Lens Reference Position Detection

- Lens Reference Position Sensor PC90 is used to detect the Lens at the reference position when the copier is turned ON.
- The Lens should be at the reference position when the Sensor output goes from LOW (enlargement side) to HIGH (reduction side). The Lens moves from this position a distance equivalent to the correction [Adjust Mode A1 (Lens Full Size Position)] to arrive at the full size position.

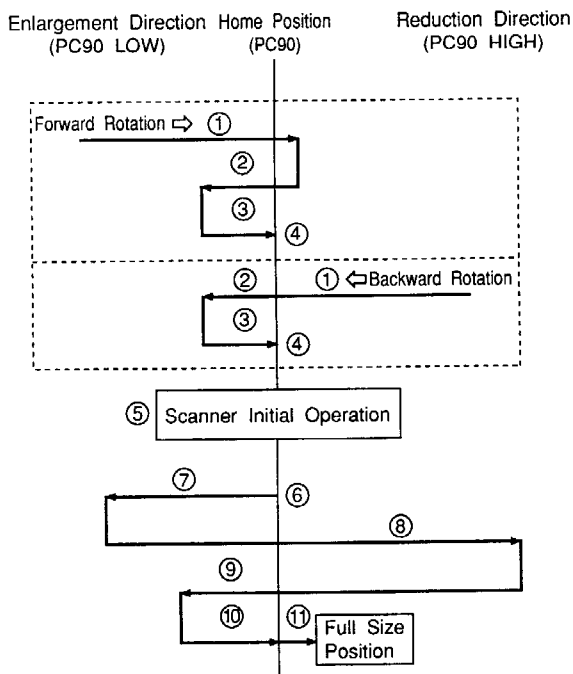
◆ Operation When Power is Turned ON

- When the Lens is located on the enlargement side (PC90 is LOW)

- ① Lens Motor M6 turns forward to move the Lens in the reduction direction.
↓
- ② M6 stops and starts turning backward when the PC90 output goes from LOW to HIGH.
↓
- ③ After being driven 32 steps (NOTE 1) from when the PC90 output goes from HIGH to LOW, M6 stops and starts turning forward.
↓
- ④ M6 stops turning when the PC90 output goes from LOW to HIGH. (The Lens is now at the home position.)
↓
- ⑤ The Scanner makes the initial motion.
↓
- ⑥ After the Scanner has completed the initial motion, M6 starts turning backward to move the Lens in the enlargement direction.
↓
- ⑦ After being driven 100 steps (NOTE 2) from when the PC90 output goes from HIGH to LOW, M6 stops and starts turning forward.
↓
- ⑧ After being driven 200 steps (NOTE 2), M6 stops and starts turning backward.
↓
- ⑨ After being driven 32 steps (NOTE 1) from when the PC90 output goes from HIGH to LOW, M6 stops and starts turning forward.
↓
- ⑩ M6 temporarily stops turning when the PC90 output goes from LOW to HIGH.
↓
- ⑪ M6 starts turning forward again and moves the Lens a distance equivalent to the correction. It then stops. (The Lens is now at the full size position.)

- When the Lens is located on the reduction side (PC90 is HIGH)

- ① M6 turns backward to move the Lens in the enlargement direction.
↓
- ② The subsequent operations are the same as those in ③ to ⑪ above.



1136T37MCB

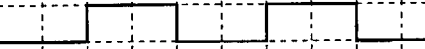
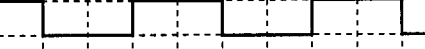
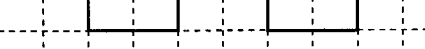

- NOTES:**
1. To enhance Lens positioning accuracy, the Lens is always brought to the full size position from the enlargement side. This compensates for the error produced by backlash in the drive gears and part-to-part variations in the Lens Moving Plate.
 2. The operations from ⑥ through ⑩ are performed to check for possible binding of the Lens moving mechanism. (These operations are not performed when the Front Door is closed.)

◆ Operation When Zoom Ratio is Changed

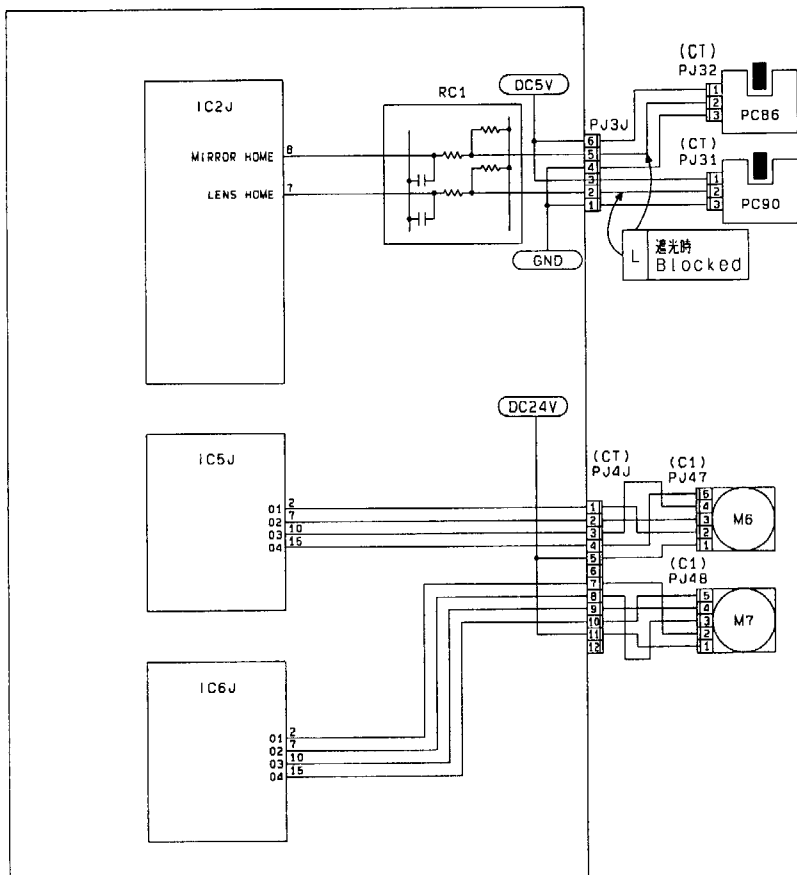
- For a reduction ratio
M6 is driven through the number of steps according to the setting of Adjust mode A-1 to move the Lens in the reduction direction.
- For an enlargement ratio
M6 is driven through the number of steps according to the setting of Adjust mode A-1 plus 32, to move the Lens in the enlargement direction.
M6 is then driven another 32 steps to move the Lens in the reduction direction.

(3) Lens Motor M6 Control

- Lens Motor M6 has four Coils, each being energized or deenergized in a given sequence (sequence of pulse signals output from pins 2, 7, 10, and 15 of IC5J on SCP Board PWB-J) to determine the direction of rotation.
- When M6 is turned forward (reduction direction), the outputs from pins 2, 7, 10, and 15 are in the order of step 4, step 3, step 2, and step 1.
- When M6 is turned backward (enlargement direction), the outputs from these pins are in the order of step 1, step 2, step 3, and step 4.

IC5J	Operation Order							
	Step 1	Step 2	Step 3	Step 4				
Pin 2	L	L	H	H				
Pin 7	H	L	L	H				
Pin 10	H	H	L	L				
Pin 15	L	H	H	L				
Forward Rotation	←				Lens Moving in Reduction Direction.			
Backward Rotation	→				Lens Moving in Enlargement Direction.			

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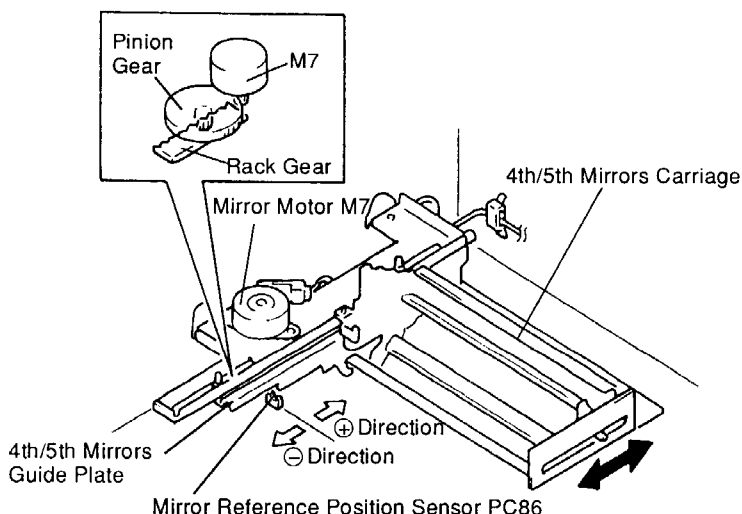


1136C09M

10-8. 4th/5th Mirrors Carriage Positioning Mechanism/Control

(1) 4th/5th Mirrors Carriage Positioning Mechanism

- To ensure that a focused image of the original is reproduced on the surface of the PC Drum when in an enlargement or reduction mode, the distance between the original and the surface of the PC Drum (conjugation distance) must be greater than that when in the full size mode. To accomplish this, the 4th/5th Mirrors Carriage is moved in the direction of a greater conjugation distance (\oplus direction).
- The 4th/5th Mirrors Carriage is moved by the rack gear fitted to the 4th/5th Mirrors Guide Plate, which is in mesh with the pinion gear. Mirror Motor M7 gives drive to this pinion gear.
- M7 is a two-phase stepping motor. The Motor is turned forward or backward by the pulse signals output from SCP Board PWB-J, thus moving the Carriage in the required direction.
- When a zoom ratio is selected, pulse signals from PWB-J are input to M7. The Motor's shaft turns 7.5° per step, which is equivalent to approx. 0.09 mm of linear Mirrors Carriage movement.



(2) 4th/5th Mirrors Carriage Reference Position Detection

- Mirror Reference Position Sensor PC86 detects the home position of the 4th/5th Mirrors Carriage when the power is turned ON.
- The 4th/5th Mirrors Carriage is at the home position when the PC86 output goes from LOW (\ominus side) to HIGH (\oplus side). The carriage moves from this position a distance equivalent to the correction [Adjust mode A-2 (Mirror Full Size Position)] to arrive at the full size position.

◆ Operation When Power is Turned ON

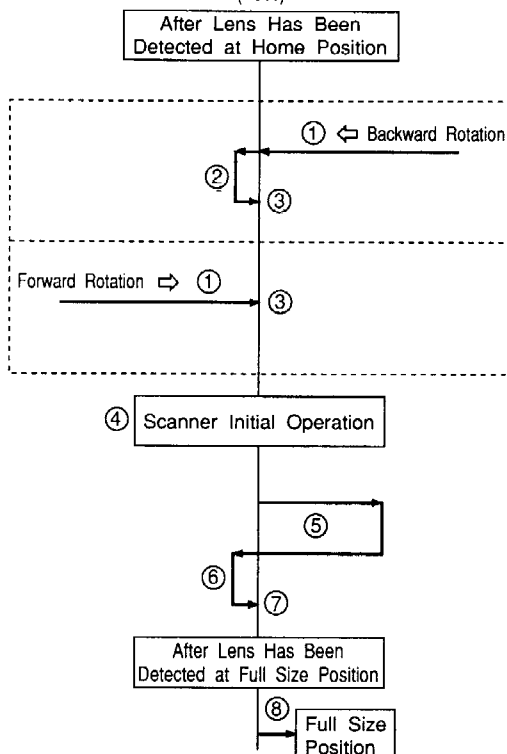
- When the 4th/5th Mirrors Carriage is located on the ⊕ side (PC86 is HIGH)

- ① After the Lens has been detected at its home position, Mirror Motor M7 turns backward to move the 4th/5th Mirrors Carriage in the ⊖ direction.
↓
- ② M7 stops and starts turning forward when the PC86 output goes from HIGH to LOW.
↓
- ③ M7 stops turning when the PC86 output goes from LOW to HIGH. (The carriage is now at the home position.)
↓
- ④ The Scanner makes the initial motion.
↓
- ⑤ After the Lens has been detected at its home position, M7 turns forward 100 steps (NOTE 2) before stopping and then starting to turn backward.
↓
- ⑥ After being driven 3 steps (NOTE 1) from when the PC86 output goes from HIGH to LOW, M7 stops and starts turning forward.
↓
- ⑦ M7 temporarily stops turning when the PC86 output goes from LOW to HIGH.
↓
- ⑧ After the Lens has been detected at the full size position, M7 starts turning forward again and moves the carriage a distance equivalent to the correction. It then stops. (The carriage is now at the full size position.)

- When the 4th/5th Mirrors Carriage is located on the ⊖ side (PC86 is LOW)

- ① After the Lens has been detected at its home position, M7 turns forward to move the carriage in the ⊕ direction.
↓
- ② The subsequent operations are the same as those in ③ to ⑦ above.

⊖ Direction (PC86 Low) Reference Position ⊕ Direction (PC86 HIGH)
(PC86)



1136T38MCA


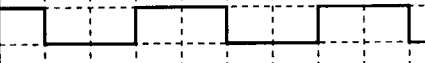
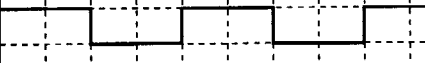

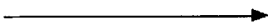

- NOTES:** 1. To enhance positioning accuracy, the 4th/5th Mirrors Carriage is always brought to the full size position from the ⊖ side. This compensates for the error produced by backlash in the drive gears.
2. The operations from ⑤ through ⑦ are performed to check for possible binding of the carriage moving mechanism. (These operations are not performed when the Front Door is closed.)

◆ Operation When Zoom Ratio is Changed

- For the ⊕ direction
M7 turns forward the required number of steps before stopping.
- For the ⊖ direction
M7 turns backward the required number of steps plus 3, then turns forward 3 steps before stopping.

(3) Mirror Motor M7 Control

- Mirror Motor M7 has four Coils, each being energized or deenergized in a given sequence (sequence of pulse signals output from pins 2, 7, 10, and 15 of IC6J on SCP Board PWB-J) to determine the direction of rotation.
- When M7 is turned forward (\oplus direction), the outputs from pins 2, 7, 10, and 15 are in the order of step 1, step 2, step 3, and step 4.
- When M7 is turned backward (\ominus direction), the outputs from these pins are in the order of step 4, step 3, step 2, and step 1.

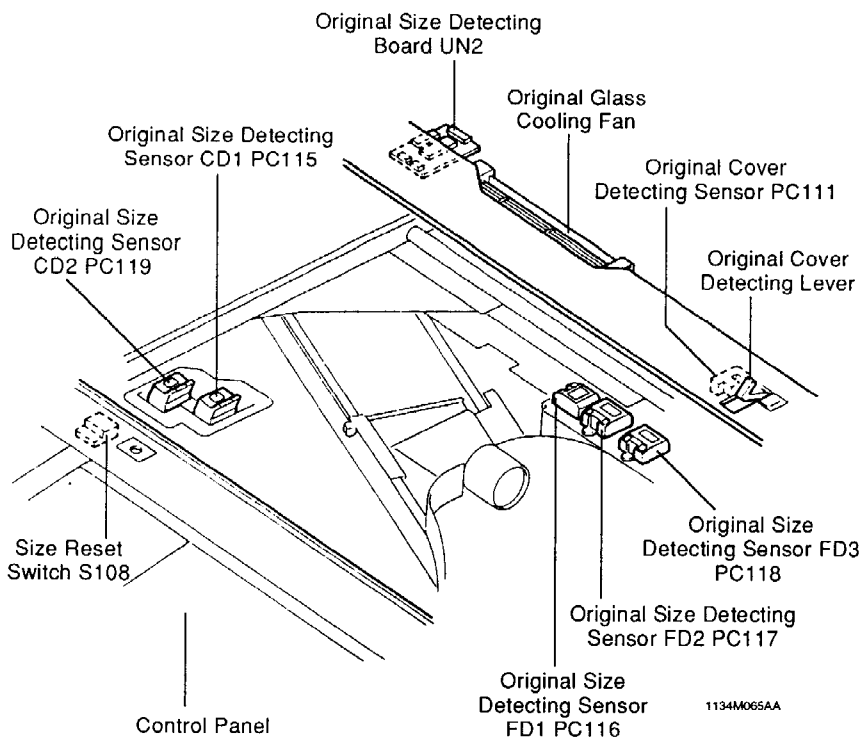
IC6J	Operation Order				
	Step 1	Step 2	Step 3	Step 4	
Pin 2	L	L	H	H	
Pin 7	H	L	L	H	
Pin 10	H	H	L	L	
Pin 15	L	H	H	L	
Forward Rotation					Mirrors Moving in \oplus Direction.
Backward Rotation					Mirrors Moving in \ominus Direction.

1136H49MCA

NOTE: See "Lens Motor M6 Control" for circuit diagram (p. M-48).

11 ORIGINAL SIZE DETECTING SYSTEM

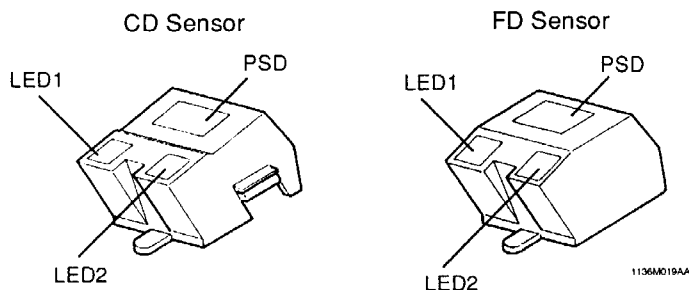
11-1. Construction



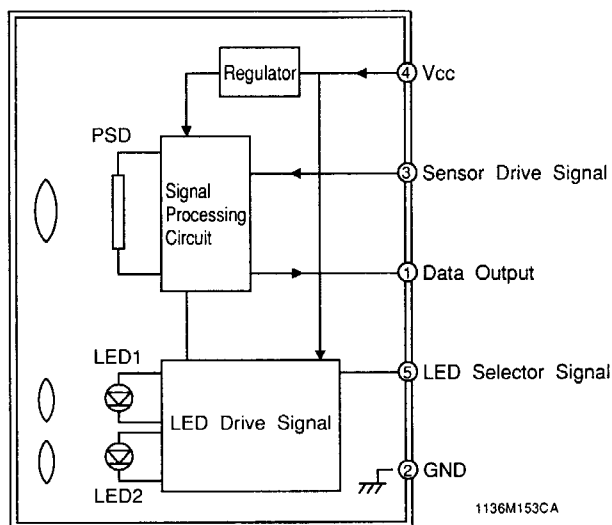
11-2. Original Size Detecting Sensors (PC115 to PC119)

(1) Construction of Each Sensor

- The original size detecting sensors determine the distance between the sensor and the original, which enables the detection of originals with high image density (Original density up to 0.6).
- All sensors are fixed to the Optical Base Plate, enhancing measuring accuracy. A movable sensor had a problem of false detection due to its position being moved.
- Each sensor has two LEDs and one photo receiver (PSD). Since the CD (crosswise) sensors (PC115, 119) are installed at a height different from FD (feeding-direction) sensors (PC116, 117, 118), each type has a different setting distance as detailed below.
CD sensors: Setting distance 115 mm
FD sensors: Setting distance 60 mm

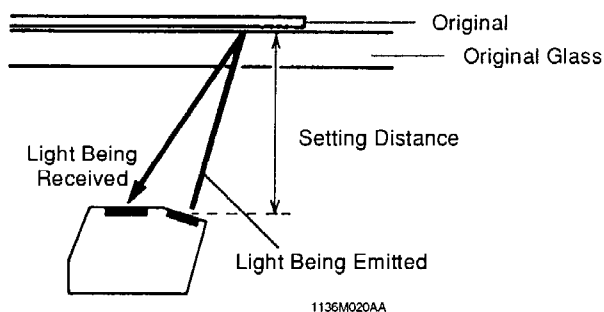


- Each sensor has a built-in signal processing circuit that outputs 8-bit serial data to Original Size Detecting Board UN2.



(2) Original Detection Method

- When the photo receiver receives the reflected light of the two LEDs at an intensity that exceeds a predetermined level, the detection system determines that an original is placed within the Setting Distance of the Sensor.

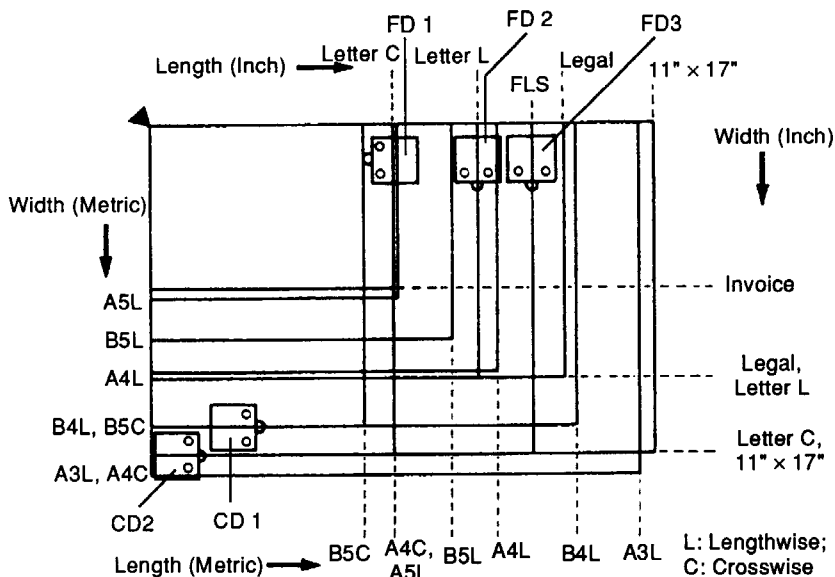


(3) Sensor Locations

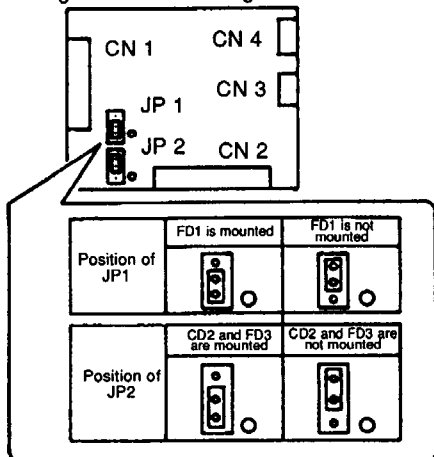
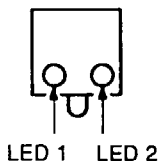
- The number and location of the Original Size Detecting Sensors. Vary depending on the marketing area as below. O: Standard ●: Optional

Sensors Areas	CD1 (PC115)	CD2 (PC119)	FD1 (PC116)	FD2 (PC117)	FD3 (PC118)
Metric Areas	O	●	O	O	●
Inch Areas	O	—	●	O	●
(Hong Kong Area)	O	O	O	O	O

NOTE: If the optional sensors are installed, set Jumper Connector JP2 on UN2 as illustrated below and run the F7 operation.



Original Size Detecting Board UN2



11-3. Original Size Detection

(1) Size Detection

- Original Size Detecting Board UN2 reads the output data provided by the original size detecting sensors (PC115 to 119). By comparing the data from each sensor with the threshold level, it determines whether there is an original placed on the Original Glass. UN2 then determines the size of the original according to the combination of the data.

(Metric Area)

		FD1	FD2		FD3		CD1		CD2
Original Size	Size Determined by UN2	LED2	LED1	LED2	LED1	LED2	LED1	LED2	LED1
A3L	A3L (A3L)	○	○	○	○(○)	○(●)	○	○	○(○)
B4L	B4L (B4L)	○	○	○	○(○)	○(●)	●	○	●(●)
A4L	A4L (A4L)	○	○	○	●(●)	●(●)	●	●	●(●)
A5L	A5L (A5L)	○	●	●	●(●)	●(●)	●	●	●(●)
A4C	A4C (A4C)	○	●	●	●(●)	●(●)	○	○	○(○)
Letter L: 8-1/2" × 11"	Letter L (Letter L)	○	○	●	●(●)	●(●)	●	●	●(●)
11" × 17"	11" × 17" (A3L)	○	○	○	○(○)	○(●)	○	○	●(○)
Legal: 8-1/2" × 14"	Legal (A4L)	○	○	○	○(●)	○(●)	●	●	●(●)
FLS: 8-1/2" × 13"	FLS (A4L)	○	○	○	○(●)	●(●)	●	●	●(●)
Letter C: 11"×8-1/2"	Letter C (A4C)	○	●	●	●(●)	●(●)	○	○	●(○)
No Original	No Original	●	●	●	●(●)	●(●)	●	●	●(●)

(Inch Area)

		FD1	FD2		FD3		CD1	
Original Size	Size Determined by UN2	LED2	LED1	LED2	LED1	LED2	LED1	LED2
11" x 17"	11" x 17" (11" x 17")	O(O)	O	O	O(O)	O(O)	O	O
Legal: 8-1/2" x 14"	Legal (Legal)	O(O)	O	O	O(O)	O(O)	●	●
Letter L: 8-1/2" x 11"	Letter L (Letter L)	O(O)	O	●	●(●)	●(●)	●	●
Letter C: 11"x8-1/2"	Letter C (Letter C)	O(O)	●	●	●(●)	●(●)	O	O
FLS: 8-1/2" x 13"	FLS (Legal)	O(O)	O	O	O(O)	●(O)	●	●
Invoice: 5-1/2" x 8-1/2"	Invoice (No Original)	O(●)	●	●	●(●)	●(●)	●	●
No Original	No Original	●(●)	●	●	●(●)	●(●)	●	●

* ○: Original Present ●: Original Not Present

* If no optional sensors are mounted, data is processed as indicated in () and the original sizes determined by UN2 are as indicated in ().

* UN2 does not use the data provided by LED1 of Original Size Detecting Sensor FD1 (PC116) and LED2 of CD2 (PC119) for the determination of the original size.

* Any non-standard size is rounded off to the nearest standard size.

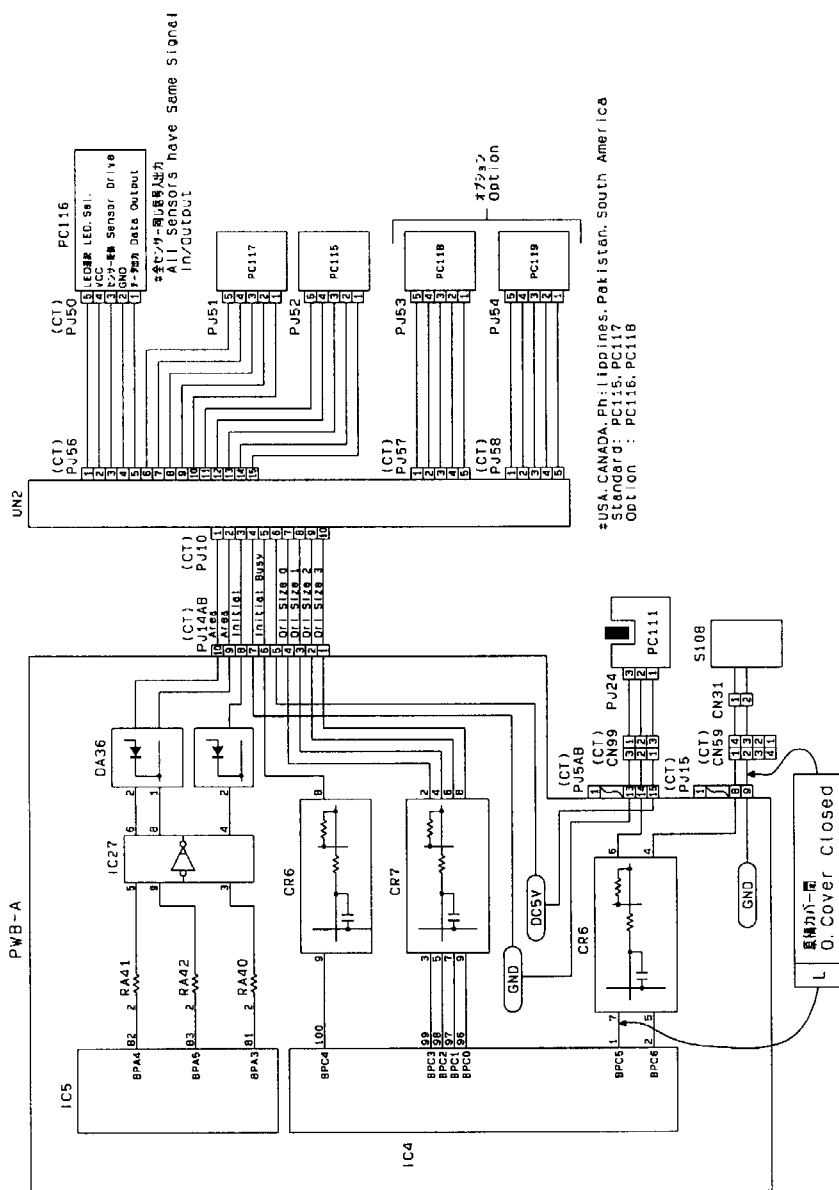
(2) Original Size Detection Processing

- The copier performs different processing for the detection of the original size under different copier conditions as follows.

	Copier Condition	Original Size Detection Processing
1	The Original Cover is left open. * Original Cover Angle Detecting Sensor PC111 remains deactivated.	LEDs of Original Size Detecting Sensors PC115 to 119 project light onto the original and the photo receivers of the sensors receive the reflected light to transmit the corresponding data to Original Size Detecting Board UN2. UN2 determines the original size based on the combination of the output data from the original size detecting sensors. UN2 divides the original size data into two parts and transmits 4-bit parallel data to Master Board PWB-A approx. every 73 msec. PWB-A combines the 4-bit original size data back into 8-bit data and selects the appropriate paper size according to the information stored in the memory.
2	The Original Cover is lowered to an angle less than 15°. * PC111 is activated.	The original size data is latched when PC111 is activated and the original size is set.
3	The Original Cover is completely lowered. * The magnets fitted to the Original Cover actuate Size Reset Switch S108.	The copier selects the appropriate paper size based on the set original size data and selects the paper source loaded with paper of that size, with the paper size indicated on the control panel (when in the Auto Paper or Size mode). If the copier is unable to find the target paper size, it gives a paper-empty warning message.
4	The Original Cover is raised to an angle less than 15°. * S108 is deactivated. * PC111 remains activated.	The set original size data and selected paper size are reset.
5	The Original Cover is raised to an angle more than 15°. * PC111 is deactivated.	The copier proceeds with the next original size detection sequence.

- * If the Start Key is pressed with the Original Cover raised (PC111 is deactivated and S108 deactivated), the copier selects the paper size according to the information stored in the memory.

11-4. Original Size Detection Circuit

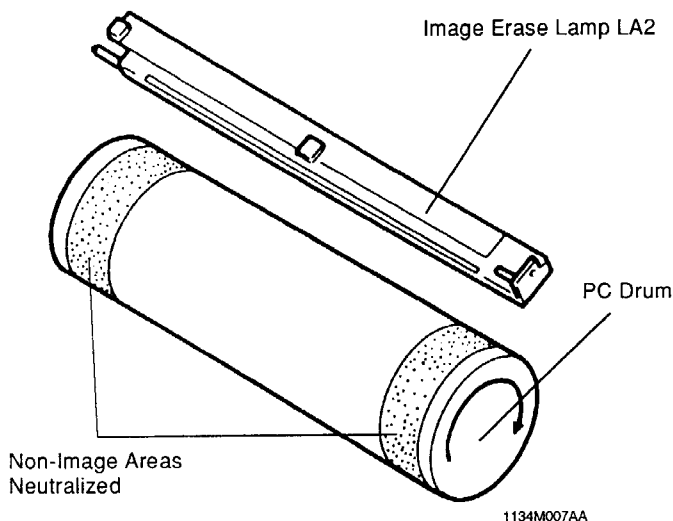


USA, CANADA, Philippines, Pakistan, South America
Standard: PC115, PC117
Option : PC116, PC118

12 IMAGE ERASE LAMP

12-1. Image Erase Lamp LA2

Any areas of charge which are not to be developed along the leading, trailing, front, and rear edges are neutralized by lighting up 40 LEDs of Image Erase Lamp LA2. This effectively prevents non-image areas from being dirtied and economizes on toner consumption.



12-2. Image Erase Lamp LA2 ON/OFF Control

(1) ON/OFF Control Data Output

Master Board PWB-A outputs 32-bit ON pattern data (DATA) to Image Erase Lamp LA2 to turn ON and OFF particular LEDs of LA2.

The ON pattern data is divided into four blocks of data (each 8 bits) output every 5 msec.

Signals sent from PWB-A are as follows:

DATA: Indicates which LED to turn ON or OFF of LA2.

CLK: Synchronizing signal to transmit data serially.

MODE: Latches the LED ON/OFF data sent from PWB-A.

STROBE: Outputs the latched LED ON/OFF data to turn ON the corresponding LEDs.

(2) Leading Edge Erase

All LA2 LEDs are turned ON and kept ON for a given period of time after SCP Board PWB-J has generated an Image Leading Edge signal (BASE) to erase the image along the leading edge.

The erase time varies depending on whether "Leading Edge Erase" of the Tech. Rep. Choice is set to "Yes" or "No" and on the control panel setting. See Table below.

Function	"Yes" (4 mm)				"No"				Frame Erase	Punch Hole Erase		
	Normal	File Margin			Normal	File Margin						
Erase Width Setting	<div></div>	10	15	20	<div></div>	10	15	20	10	10	15	20
Image Erase Width	4	14	19	24	0	10	15	20	10	10	15	20
Timer	80	115	135	155	65	100	120	140	100	100	120	140

Unit: Erase width = mm, Timer = msec.

(3) Edge Erase

The 40 LEDs of LA2 are turned ON and OFF as follows according to the zoom ratio or paper size to erase unnecessary charges along both the front and rear edges of the image.

- * The LEDs are turned ON according to the paper size in the full size mode.
- * In any zoom ratio other than full size, LEDs are turned ON according to the paper size or zoom ratio whichever causes more LEDs to light up.
- * LEDs are turned ON according to the zoom ratio in manual bypass copying which circumvents paper size detection.

The 40 LEDs are classified into 32 groups as follows and they are turned ON or OFF by groups for edge erase.

Group No.	LED No.	Image Width (mm)
0	1	300
1	2	292
2	3	284
3	4	277
4	5	267
5	6	260
6	7	251
7	8	244
8	9	235
9	10	229
10	11	220
11	12	212
12	13	203
13	14	194
14	15	184
15	16	174

Group No.	LED No.	Image Width (mm)
16	17	166
17	18	158
18	19	150
19	20	142
20	21	135
21	22	126
22	23	116
23	24	107
24	25	99
25	26	93
26	27-35	-
27	36	-
28	37	-
29	38	-
30	39	-
31	40	-

- * Numbers are assigned to the LEDs so that the front LED is 40, looking at the copier from the front.
- * The "image width" refers to the unexposed image area between the LEDs numbered from 1 to the corresponding opposite ones that are turned ON.

LA2 LEDs ON/OFF Pattern

Zoom Ratio	Paper Width (mm)	LED Group No.																															
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	~99	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	100~107	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	108~116	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	117~126	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	127~135	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	136~142	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	~0.522	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	0.523~0.550	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	0.551~0.576	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	0.577~0.610	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	0.611~0.642	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	0.643~0.672	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	0.673~0.698	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	0.699~0.728	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	0.729~0.758	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	0.759~0.776	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	0.777~0.806	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	0.807~0.830	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	0.831~0.854	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	0.855~0.882	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	0.883~0.914	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	0.915~0.938	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	0.939~0.964	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	0.965~0.990	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	0.991~	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O

O = LED that turns ON

LA2 LEDs ON/OFF Pattern (Frame Erase, erase width 10 mm)

Paper Width (mm)	LED Group No.																															
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	30	31		
~105	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
106~113	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
114~121	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
122~130	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
131~140	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
141~149	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
150~156	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
157~164	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
165~172	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
173~180	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
181~188	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
189~198	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
199~208	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
209~217	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
218~225	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
226~234	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
235~243	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
244~249	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
250~258	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
259~265	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
266~272	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
273~281	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
282~291	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
292~298	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O
299~	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O				O	O

O = LED that turns ON

(4) Trailing Edge Erase

All LA2 LEDs are turned ON and kept ON for a given period time after the lapse of a certain time after SCP Board PWB-J has generated a SCEND signal to erase the image along the trailing edge.

The erase start timing varies depending on whether "Trailing Edge Erase" of the Tech. Rep. Choice is set to "Yes" or "No" and on the control panel setting. See Table below.

Function	"Yes" (4 mm)				"No"				Frame Erase	Punch Hole Erase		
	Normal	File Margin			Normal	File Margin						
Erase Width Setting		10	15	20		10	15	20	10	10	15	20
Image Erase Width	4	14	19	24	0	10	15	20	10	10	15	20
Timer	260	225	205	185	275	240	220	200	240	240	220	200

Unit: Erase width = mm, Timer = msec.

(5) Center Erase

All LA2 LEDs are turned ON after the lapse of a certain time after SCP Board PWB-J has generated an Image Leading Edge signal (BASE) to erase the image at the center of the paper.

The erase start timing varies for different paper sizes and erase widths as shown below. The erase time depends on the erase width.

Erase Start Timing

Paper Size		A4C	A4L	A3L	A5C	B4L	B5L	B5C	8.5"	11"	17"
Paper Length		210	297	420	149	364	257	182	216	279	432
Erase Start Timing	10mm	445	605	835	330	730	530	395	455	575	855
	15mm	435	595	825	325	720	525	385	445	565	845
	20mm	425	590	815	315	710	515	375	440	555	840

Unit: Paper Length = mm, Erase Start Timing = msec. L: Lengthwise; C: Crosswise

Erase Time

Erase Width	Erase Time
10 mm	25 msec.
15 mm	45 msec.
20 mm	65 msec.

(6) 2-In-1 Erase

When only a single original is placed on the Original Glass in the 2-in-1 mode (using Duplexing Document Feeder), the copier erases the area where no originals are present.

Different controls are provided depending on whether "Odd" is specified on the control panel for the number of originals to be used.

If "Odd" is specified, all LEDs are turned ON and kept ON for a given period of time after SCP Board PWB-J has generated an Image Leading Edge signal (BASE) to erase the first half page of the last original.

Paper Size	A4C	A4L	A3L	A5C	B4L	B5L	B5C	8.5"	11"	17"
Paper Length	210	297	420	149	364	257	182	216	279	432
Erase Time	455	615	845	340	740	540	400	465	580	865

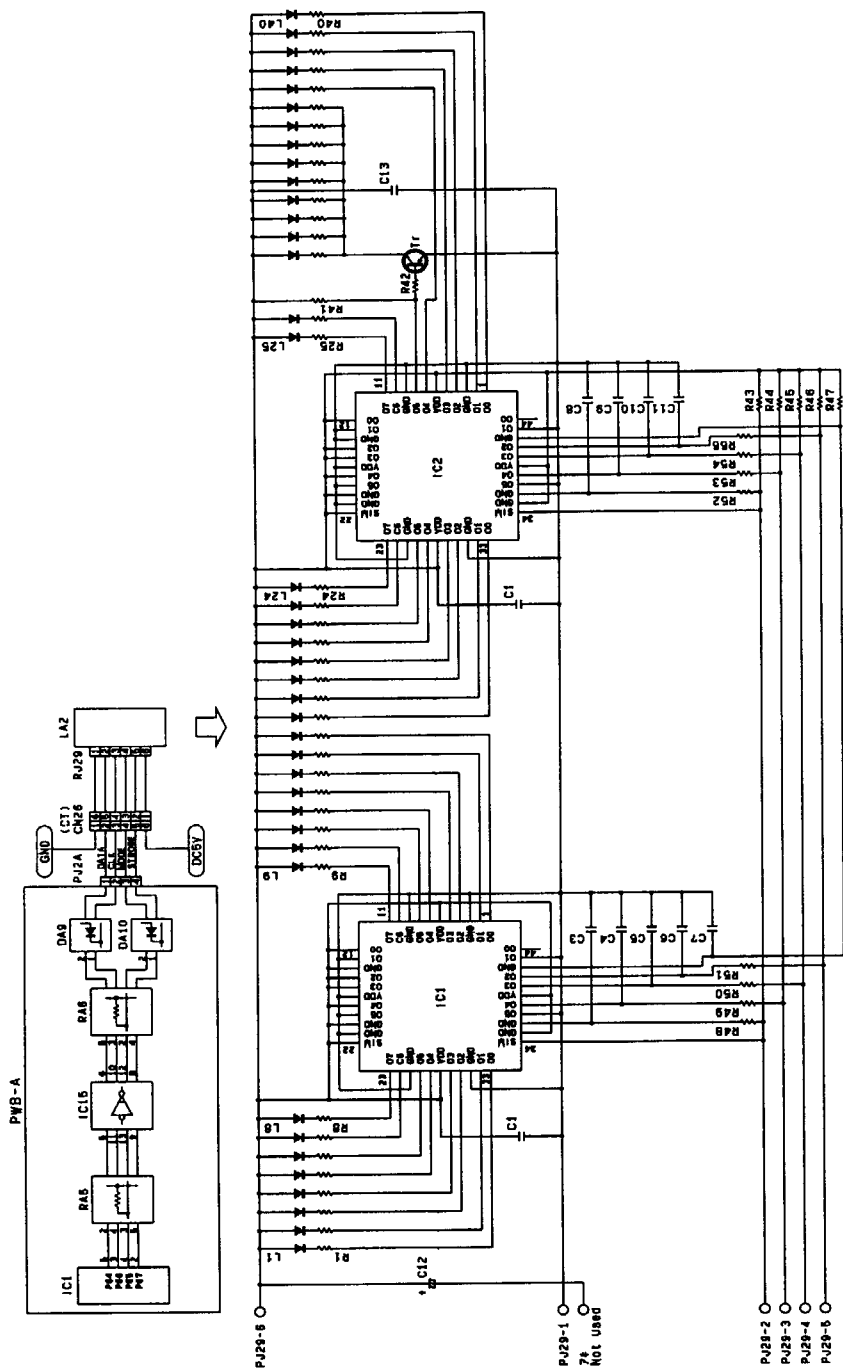
Unit: Paper Length = mm, Timer = msec. L: Lengthwise; C: Crosswise

If "Odd" is not specified, all LEDs are turned ON after the lapse of a given period of time after PWB-J has generated a BASE signal to erase the last half page of the first original.

Paper Size	A4C	A4L	A3L	A5C	B4L	B5L	B5C	8.5"	11"	17"
Paper Length	210	297	420	149	364	257	182	216	279	432
Timer	465	625	855	350	750	550	410	475	590	875

Unit: Paper Length = mm, Timer = msec. L: Lengthwise; C: Crosswise

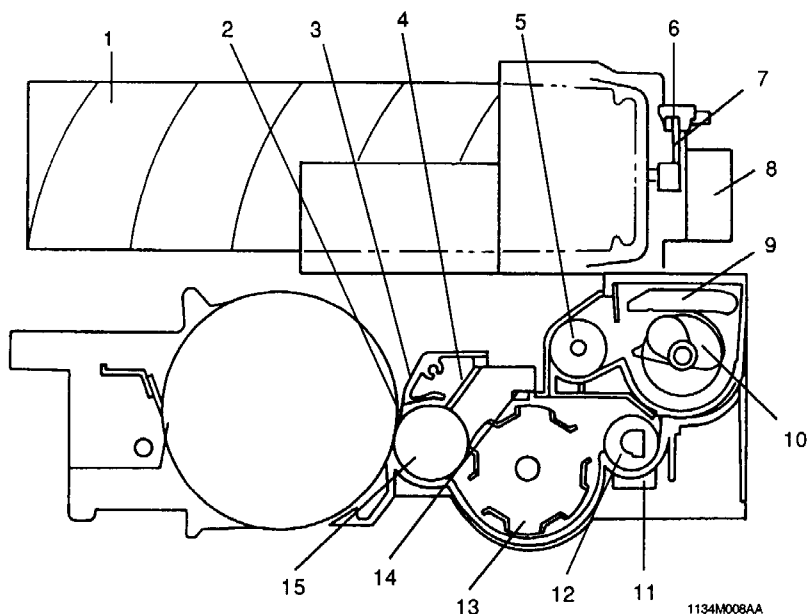
12-3. Image Erase Lamp LA2 Circuit



13 DEVELOPING UNIT

13-1. Construction and Function

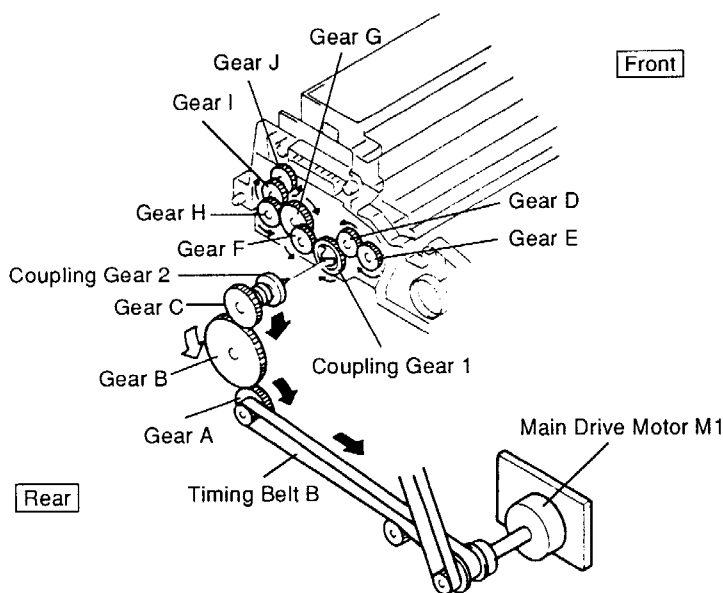
- This copier employs the New Micro-Toning developing system. The toner fed up to the Sleeve/Magnet Roller is conveyed onto the points of development (N1, N2) as the Sleeve/Magnet Roller turns, thereby forming a visible, developed toner image of the original.



- | | |
|---|---|
| 1. Toner Bottle | 9. Sub Hopper Toner Empty |
| 2. Developer Scattering Prevention Mylar | Detecting Lever |
| 3. Developer Scattering Prevention Plate | 10. Sub Hopper Toner Agitating Lever |
| 4. Doctor Blade | 11. ATDC Sensor UN4 |
| 5. Sub Hopper Toner Supply Roller | 12. Developer Conveying/Agitating Screw |
| 6. Toner Bottle Home Position Sensor PC35 | 13. Bucket Roller |
| 7. Toner Bottle Home Position Detecting Plate | 14. Magnetic Sheet |
| 8. Main Hopper Toner Replenishing Motor M8 | 15. Sleeve/Magnet Roller |

13-2. Developing Unit Drive Mechanism

- Drive is transmitted from the copier to the Developing Unit by Coupling Gears 1 and 2 when they mesh.
- Coupling Gear 2 is spring-loaded. If the protruding part of Coupling Gear 1 makes contact with that of Coupling Gear 2 when the Developing Unit is slid into the copier, spring-loaded Coupling Gear 2 is pushed back toward the rear of the copier allowing the Developing Unit to be slid into position. When drive is later transmitted to the Developing Unit, Coupling Gear 2 is pushed to the front by the tension of the spring to mesh positively with Coupling Gear 1.



1134M009AA

<Copier>

Drive from Main Drive Motor M1 is transmitted via Timing Belt B to Gear A which is turned clockwise.



Drive is transmitted via Gear B to Gear C, causing Coupling Gear 2 mounted on the same shaft as Gear C to turn clockwise.



<Developing Unit>

Coupling Gear 1 turns clockwise.



The Bucket Roller is turned clockwise.

→ Gear E is turned clockwise through Gear D.



The Sleeve/Magnet Roller is turned clockwise.

→ Gear G is turned clockwise through Gear F.



The Developer Conveying/Agitating Screw is turned clockwise.



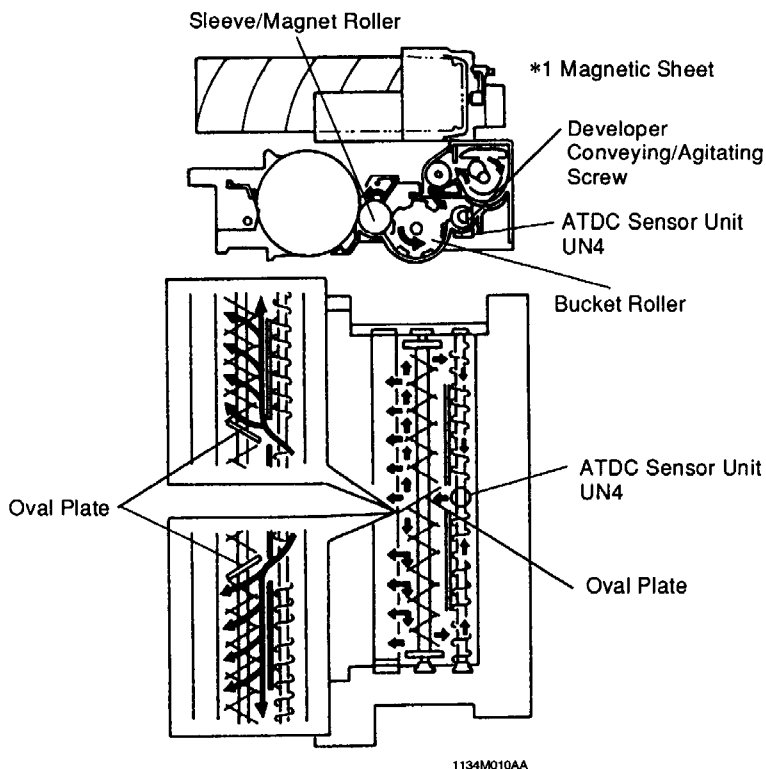
→ Gear J is turned counterclockwise through Gears H and I.



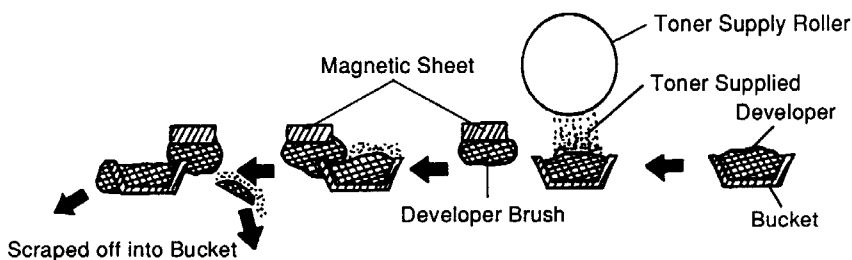
The Sub Hopper Toner Agitating Lever is turned counterclockwise.

13-3. Developer Flow

- When drive from Main Drive Motor M1 is transmitted, the Bucket Roller, Developer Conveying/Agitating Screw, and Sleeve/Magnet Roller start turning. As a result, the developer and toner flow along a figure-8 shaped path as indicated by the arrows below, thus mixing and agitating toner and carrier efficiently.



- *1: The Magnetic Sheet prevents the Bucket Roller from supplying toner from the Sub Hopper directly onto the Sleeve/Magnet Roller without mixing it well with the developer.



From the Sub Hopper, an even amount of toner is supplied in line over the Bucket Roller by the Sub Hopper Toner Supply Roller.

↓

→ The toner is then mixed together with the developer inside the Bucket Roller and conveyed to both ends of the Bucket Roller. From the two ends, it is fed to the Developer Conveying/Agitating Screw which further agitates the developer.

↓

The toner-to-carrier ratio of the developer, which has been conveyed to the center of the Developer Conveying/Agitating Screw, is sensed by ATDC Sensor UN4.

↓

At the center of the Developer Conveying/Agitating Screw, the developer is again fed onto the Bucket Roller and directed towards the front and rear of the Bucket Roller by the Oval Plate, which ensures that the developer is fed evenly over the Sleeve/Magnet Roller.

↓

Part of the developer which was not fed to the Sleeve/Magnet Roller is fed back again via both ends of the Bucket Roller to the Developer Conveying/Agitating Screw.

↓

The developer forms bristles on the Sleeve/Magnet Roller by the magnetic poles of different magnetic forces and the height of the developer brush is regulated by the Doctor Blade. Toner is then pulled off the carrier and clings to the charged areas of the PC Drum to form a visible, developed image of toner.

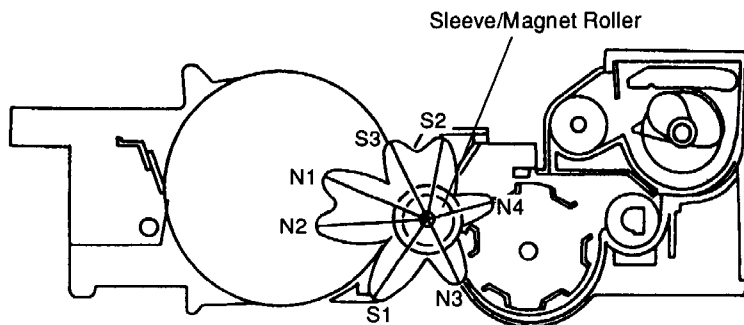
↓

The developer not used for development is carried back to the Developer Conveying/Agitating Screw via the Bucket Roller.

↓

13-4. Magnetic Pole Positioning

- The Magnet Roller is made up of seven magnets asymmetrically packed.
- Here is the function of each of these poles.



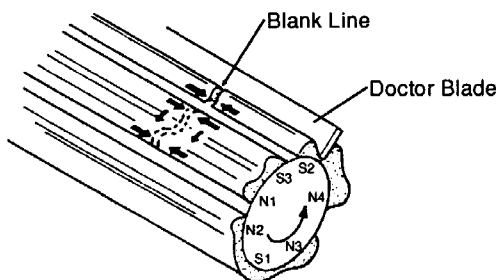
1134M012AA

- N4 : The developer fed by the Bucket Roller is attracted onto the surface of the Sleeve Roller and the developer brush is formed before being regulated by the Doctor Blade.
- S2, S3 : These two poles are provided between the relatively wide gap between N4 and N1. They hold the developer brush firmly onto the surface of the Sleeve Roller until it reaches the point of development.
These poles are like poles, which causes disturbance (*1) in the developer, thus smoothing out the developer. This effectively prevents blank lines from occurring on the copy.
- N1, N2 : These two poles are the principal magnetic poles and their lines of magnetic flux at the point of development are perpendicular to the surface of the PC Drum.
As with S2 and S3, these poles are like poles, which causes disturbance (*1) in the developer, thus smoothing out the developer. This effectively prevents blank lines from occurring on the copy.
- N2-S1 : A strong magnetic force is provided between these two poles to ensure that the carrier is firmly held onto the Sleeve Roller.
- S1-N3 : The height of the developer brush is held low to ensure that the developer remaining on the Sleeve Roller is smoothly recycled to the Developer Mixing Chamber. The area also prevents the developer from scattering.
- N3 : This pole prevents the developer in the Developer Mixing Chamber from flowing back.
- N3-N4 : Since the magnetic force between these two poles is weak, the developer falls off the surface of the Sleeve Roller down into the Developer Mixing Chamber.

(*1): Flow of developer due to disturbance on the Sleeve Roller

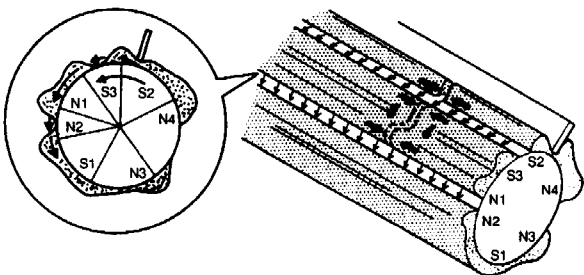
- The developer is moved as follows on the surface of the Sleeve Roller by disturbance caused by repulsion between lines of like polarity.

- When the developer is conveyed up to the first (S2 or N1) of the two like poles, it can go in no directions but sideways because of the force of repulsion between the two like poles (S2 and S3, or N1 and N2).
- There are, on the surface of the Sleeve Roller, areas which are covered with no or a very little developer. For convenience, let's call these areas the low developer-density areas. Now, that part of developer which has moved sideways flows to these low developer-density areas, thus covering the surface with a uniform thickness of developer.



1138M250AA

- That part of developer remaining on the first pole due to repulsion from the second pole is pushed by the successive waves of developer, moving to the second pole.
- At this time, the disturbance generated by repulsion between lines of like polarity therefore causes the developer to cover those areas which were not smoothed out at the first pole.
- Especially with the points of development, N1 and N2, the entire layer of the developer is moved from N1 to N2, while being mixed in itself by disturbance. This makes for high development efficiency.



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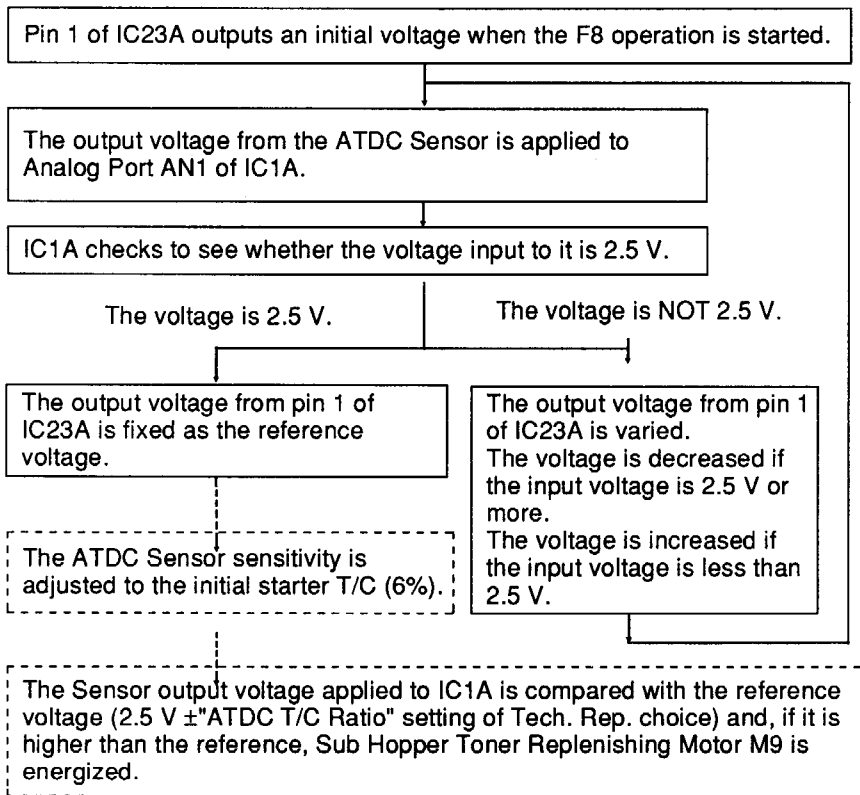
13-5. ATDC Sensor Control

◆ ATDC Sensor

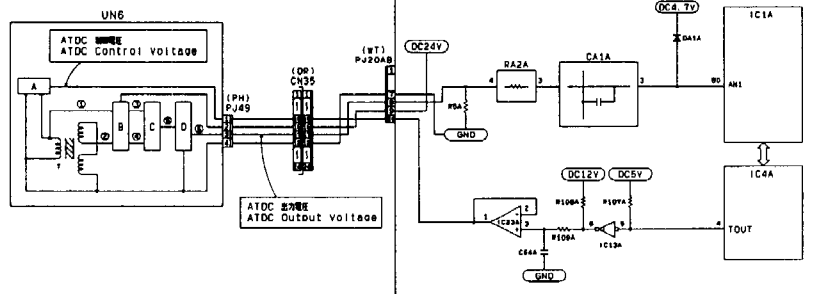
- ATDC Sensor UN4 is installed at the center of the Developer Conveying/Agitating Screw on the underside of the Developer Mixing Chamber. It detects the varying toner-to-carrier ratio of the developer, which is circulated through the chamber, as changes in the magnetic flux density. The magnetic flux density is converted to a corresponding voltage value which is applied to the analog port of IC1A on Master Board PWB-A.
- There is a cleaning mylar at the center of the Developer Conveying/Agitating Screw. It ensures that fresh developer moves over UN4 at all times, thus ensures detection of accurate toner-to-carrier ratio.

◆ ATDC Sensor Automatic Adjustment

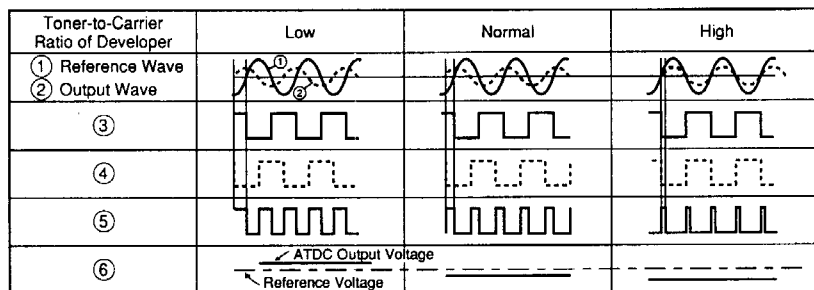
- The sensitivity of the ATDC Sensor is automatically adjusted to starter with a 6% T/C when the F8 test operation is run after fresh starter is loaded.



A: 电压振荡器 Colpitts Oscillator Circuit	C: 相位差检测器 Phase Difference Detecting Circuit
B: 波整流器 Wave Rectifier Circuit	D: 平滑化电路 Smoothing Circuit



1136C14M



Set T/C	Reference Voltage
4.0 %	2.943 V
4.5 %	2.825 V
5.0 %	2.717 V
5.5 %	2.608 V
6.0 %	2.500 V
6.5 %	2.391 V
7.0 %	2.283 V
7.5 %	2.174 V

<Toner Replenishing Control by ATDC Sensor>

- UN4 samples the toner-to-carrier ratio at the following timings for each copy

<ATDC Sampling Timing>

- Approx. 20 msec. after a LOW BASE signal, which is output from pin 2 of IC2J on SCP Board PWB-J for each scan motion, has been input to pin 64 of IC4A on PWB-A, the ATDC Sensor takes readings at about 5-msec. intervals for about 500 msec. (i.e., taking about 100 readings).

- The ATDC Sensor output voltages are applied to pin 80 of IC1A on PWB-A and averaged. The average value of the readings sampled is compared with the reference voltage, which represents the "ATDC T/C Ratio" setting made by the Tech. Rep. Choice and toner is replenished in either of the following four modes.

① Large Amount Replenishing

- If the sensor output voltage is lower than the "ATDC T/C Ratio" setting by 0.5% or more, Sub Hopper Toner Replenishing Motor M9 is energized as follows.

Replenishing Time (A4)	Amount Replenished (A4)
885 msec. (*1)	Approx. 133 mg

② Small Amount Replenishing

- If the sensor output voltage is lower than the "ATDC T/C Ratio" setting by less than 0.5%, M9 is energized as follows.

Replenishing Time (A4)	Amount Replenished (A4)
445 msec. (*1)	Approx. 66.5 mg

③ Fixed Amount Replenishing

- If the sensor output voltage is higher than the "ATDC T/C Ratio" setting by less than 1%, M9 is energized as follows.

Replenishing Time (A4)	Amount Replenished (A4)
90 msec. (*1)	Approx. 13.3 mg

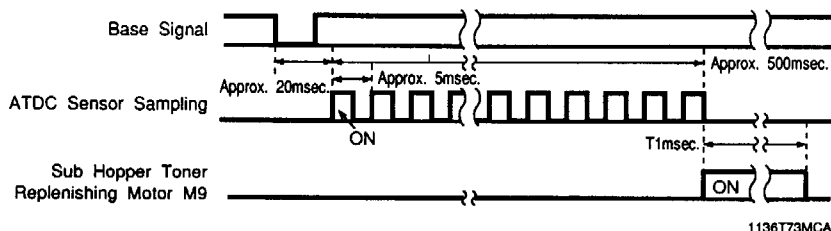
④ No toner replenishing

- No toner is replenished if the sensor output voltage is higher than the "ATDC T/C Ratio" setting by 1.0% or more.

NOTES

- The toner replenishing time and the amount of toner replenished vary according to the paper size.
- As a rule, toner is replenished based on the detection by UN4. If erroneous toner replenishing occurs due to a faulty UN4, however, AIDC Sensor UN3 comes into play for correct toner replenishing.

(*1): M9 is actually energized 50 msec. earlier to take into account the rise time of the motor.



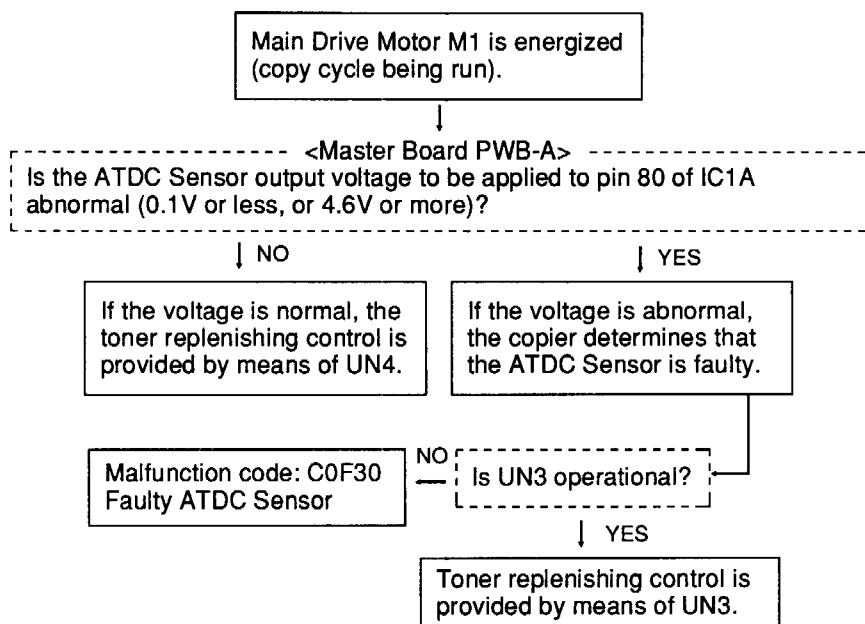
T1: Varies according to the ATDC Sensor out put Voltage and paper size.

13-6. ATDC Sensor Self Recovery Function

(1) Control for Faulty ATDC Sensor

- If ATDC Sensor UN4 malfunctions, toner is not replenished correctly, resulting in image trouble and toner spillage.
- This copier is provided with a function that switches from UN4 to AIDC Sensor UN3 as a means of toner replenishing control in case UN4 malfunctions.

<ATDC to AIDC Switching Control>



- When UN3 is used for the toner replenishing control, the "ATDC T/C Ratio" setting made by the Tech. Rep. Choice becomes invalid and the standard T/C of 6% is used at all times.
- During toner replenishing control by UN3, the function "Toner Replenisher" of the User Mode is disabled.
- If UN4 is repaired or replaced and becomes fully operational, UN4 takes the place of UN3 for the toner replenishing control as soon as the current copy cycle is completed.

<Toner Replenishing Control by AIDC Sensor>

- An AIDC pattern is produced on the surface of the PC Drum by Image Erase Lamp LA2 and AIDC Sensor UN3 detects the amount of toner attracted onto that pattern.
- The AIDC pattern is produced and UN3 takes a reading for each copy cycle between two sheets of paper or after a sheet of paper is fed out as detailed below.

Exposure Lamp LA1 is turned OFF approx. 250 msec. after a LOW SCEND signal has been output from pin 3 of IC2J on SCP Board PWB-J for each scan motion.

↓
A given period of time thereafter, all LA2 LEDs are turned ON.

↓
Approx. 600 msec. after LA1 has been turned OFF, the LA2 LED above the AIDC Sensor is turned OFF and kept OFF for approx. 100 msec., thereby producing an AIDC pattern on the surface of the PC Drum.

(In a multi-copy cycle, LA1 is turned ON after each AIDC pattern has been produced.)

↓ Approx. 490 msec.

UN3 samples the AIDC pattern for approx. 50 msec.

(In a multi-copy cycle, the Scanner begins the scan motion for the subsequent copy approx. 160 msec. after the sampling sequence has been completed.)

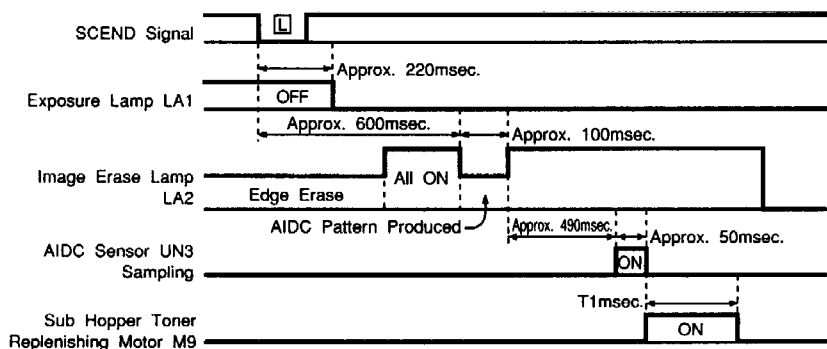
↓
The AIDC Sensor voltages output from UN3 are applied to pin 79 of IC1A on Master Board PWB-A and averaged. The average value of the outputs is compared with the reference voltage equivalent to T/C 6% and toner is replenished in either of the following four modes.

AIDC Sensor Output Voltage	Replenishing Mode	Replenishing Time (A4)	Amount Replenished (A4)
DC0V to 3V	Large amount replenishing	1283 msec. (*1)	Approx. 190 mg
DC3V to 3.6V	Medium amount replenishing	887 msec. (*1)	Approx. 131 mg
DC3.6V to 4.2V	Small amount replenishing	89 msec. (*1)	Approx. 13 mg
DC4.2V to 4.7V	No toner replenishing	—————	—————

NOTE

The toner replenishing time and the amount of toner replenished vary according to the paper size.

*(*1): M9 is actually energized 50 msec. earlier to take into account the rise time of the motor.*



T1: Varies according to the ATDC Sensor out put Voltage and paper size.

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(2) Control for Abnormally Low T/C

- Any of the following faulty conditions could cause a steep drop in T/C, resulting in image trouble and carrier scattering.
 - Defective Sub Hopper Toner Replenishing Motor M9
 - Plugged toner supply path
 - Defective Sub Hopper Toner Empty Switch S106
 - A large number of copies are made from originals with image density higher than the specifications.
- When ATDC Sensor UN4 detects an abnormally low T/C due to any of the above reasons during a copy cycle, the self recovery function of the copier interrupts the current copy cycle to replenish the supply of toner temporarily.

<Detecting Conditions>

- If the T/C detected by UN4 is lower than the "ATDC T/C Ratio" setting by 2% or more, the copier determines that the T/C is abnormally low.
 - An abnormally low T/C is not detected, however, when a toner-empty condition has been detected or UN4 found faulty.
- If an abnormally low T/C is detected, the paper take-up motion will be brought to an immediate stop and M9 is energized to replenish the supply of toner.

- Here is a toner replenishing sequence performed when an abnormally low T/C is detected.

<Master Board PWB-A>

- The ATDC Sensor output voltage applied to pin 80 of IC1A indicates an abnormally low T/C (T/C is lower than the "ATDC T/C Ratio" setting by 2% or more). The copier determines that the T/C is abnormally low.



- After the copy cycle has been completed for the paper which has been taken up and fed in, the next paper take-up sequence is interrupted and, instead, Sub Hopper Toner Replenishing Motor M9 is energized.



- While M9 is being energized (toner is being replenished), ATDC Sensor UN4 takes readings at about 5 msec. intervals for about 500 msec. to check for T/C.



Has the T/C increased by 1%?

↓ YES

↓ NO

- M9 is deenergized and the copy cycle is resumed after the toner replenishing motion has been brought to a stop. (Control is now passed back onto normal toner replenishing.)

- The readings are taken at the same timings again to check for T/C.
- If T/C is not increased even after these operations for 140 sec., the sequence goes to the next step.



- The toner replenishing sequence is further continued, while UN4 takes readings at the same timings to check for T/C.



YES

Has the T/C increased by 2%?

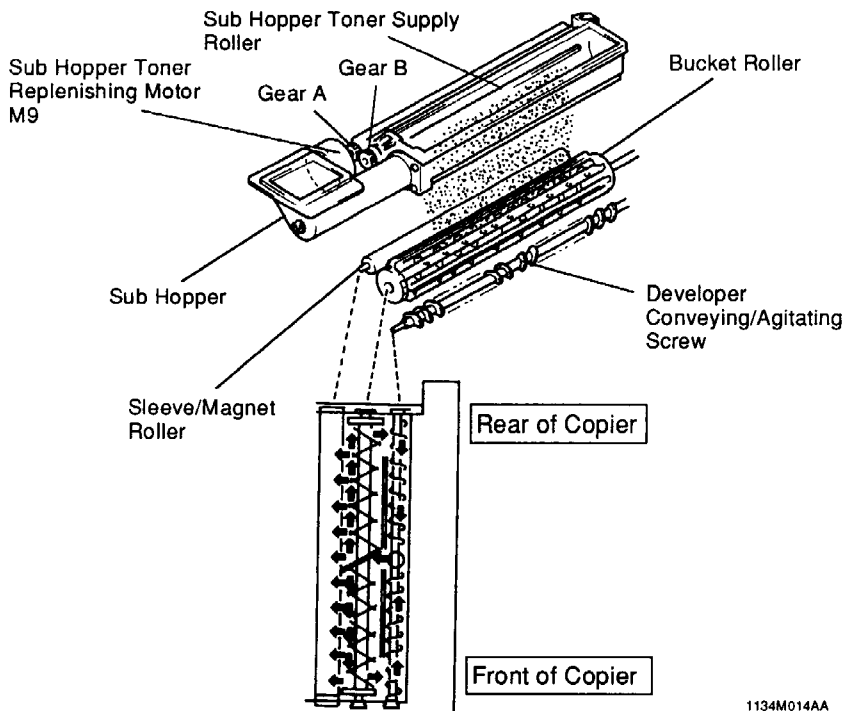
↓ NO

- The readings are taken at the same timings again to check for T/C.
- If T/C is not increased even after these operations for 80 sec., the copier shows the following malfunction code on the Touch Panel.
Malfunction Code: C0072 (Defective M9)

13-7. Sub Hopper Toner Replenishing Mechanism/Control

<Toner Replenishing Mechanism>

- The ATDC Sensor output voltage (T/C ratio) and the paper size determine the toner replenishing time.
- A toner replenishing sequence is carried out when Sub Hopper Toner Replenishing Motor M9 at the front of the PC Unit is energized.



M9 is energized.

↓

Gear A on the motor shaft is turned, which turns Gear B counterclockwise.

↓

The Sub Hopper Toner Supply Roller is turned counterclockwise feeding toner from the Sub Hopper to the Bucket Roller of the Developer Mixing Chamber.

↓

The toner supplied is mixed with the developer by the Bucket Roller and Developer Conveying/Agitating Screw so that toner and carrier become sufficiently triboelectrically charged.

<Toner Replenishing Control>

- When the copier determines that toner replenishing is necessary based on the ATDC output voltages, M9 is controlled by the M9 Remote signal output from pin 50 of IC4A on PWB-A.

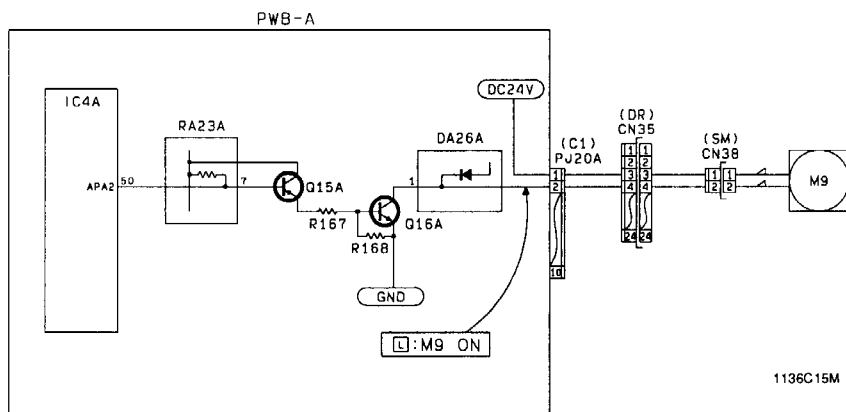
<Operation>

After detection by ATDC Sensor or AIDC Sensor
(if ATDC Sensor is faulty)

<PWB-A>

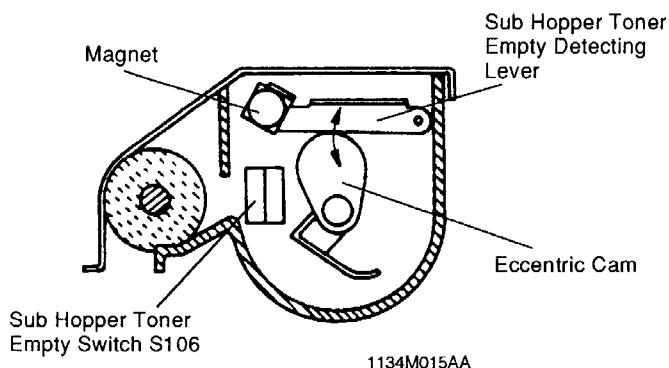
According to the Sensor output voltage and the paper size being used, a LOW Remote signal is output from pin 50 (APA2) of IC4A for a given period of time.

M9 is energized.

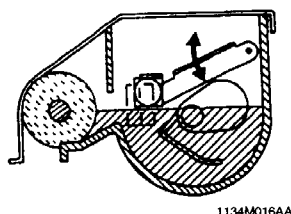


13-8. Sub Hopper Toner Empty Detection Control

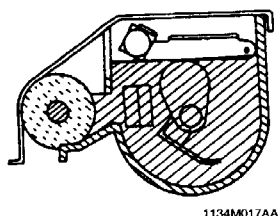
- A toner-empty condition in the Sub Hopper is detected by the magnet fitted to the Sub Hopper Toner Empty Detecting Lever and Sub Hopper Toner Empty Switch S106.
- The Sub Hopper Toner Empty Detecting Lever rides on the eccentric cam fitted to the rear of the Sub Hopper Toner Agitating Lever. It is moved up and down as the eccentric cam is turned by the drive transmitted from Main Drive Motor M1.
- While the amount of toner in the Sub Hopper is more than the predetermined one, the Sub Hopper Toner Empty Detecting Lever rests on toner and does not make the up-and-down motion. S106 therefore remains deactuated.
- When the amount of toner in the Sub Hopper is less than the predetermined one, the Sub Hopper Toner Empty Detecting Lever is moved up and down by the eccentric cam. This results in S106 being repeatedly actuated and deactuated. When the number of times S106 is actuated exceeds a predetermined value, the copier CPU determines that the Sub Hopper has run out of toner.



(Toner Empty)



(Toner Full)



<Control>

• Toner Empty Detection Control

The Sub Hopper toner empty detection sequence is carried out while the Developing Unit remains energized.

Sub Hopper Toner Empty Switch S106 is actuated.

Master Board PWB-A

A LOW Sub Hopper Toner Empty signal is input to pin 57 (APB1) of IC4A.

Main Hopper Toner Replenishing Motor M8 is energized to turn the Toner Bottle one turn, thus replenishing toner from the Main Hopper to Sub Hopper.

The Toner Bottle is turned one turn each to let the Main Hopper supply toner to the Sub Hopper until the Sub Hopper Toner Empty signal input to pin 57 of IC4A remains HIGH for 2 sec.

The above operations are repeated and, if the Sub Hopper Toner Empty signal does not remain HIGH for 2sec. even after the Toner Bottle has been turned ten turns, the Toner Bottle is not turned again.

The copier determines that there is a toner-empty condition in the Sub Hopper, giving the toner-empty message on the Touch Panel.

• Control After Toner Empty Detection

The Front Door is swung down, Toner Bottle replaced, and the Front Door closed.

Master Board PWB-A

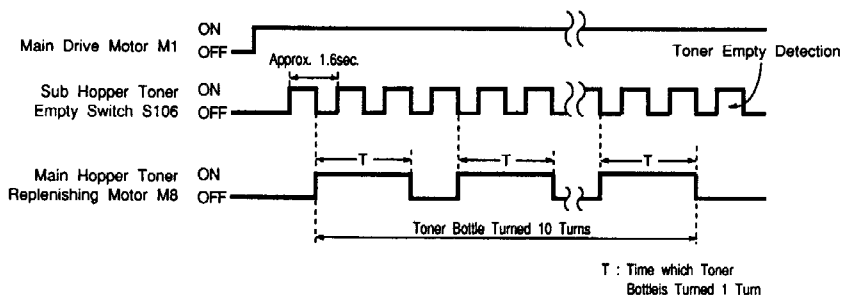
M8 is energized to turn continuously the Toner Bottle so that toner is supplied from the Main Hopper to Sub Hopper.

As soon as the signal from S106 remains HIGH for 2sec., M8 is deenergized to stop the Toner Bottle.

The toner-empty message on the Touch Panel goes out.

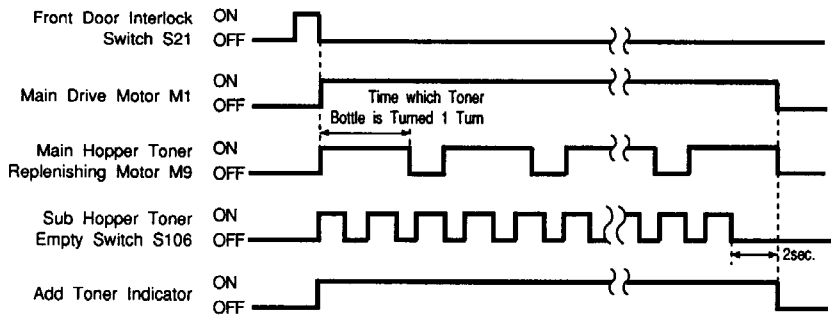
NOTE: If the toner-empty message is not reset by opening and closing the Front Door once, try opening and closing the door one more time.

Toner Empty Detection

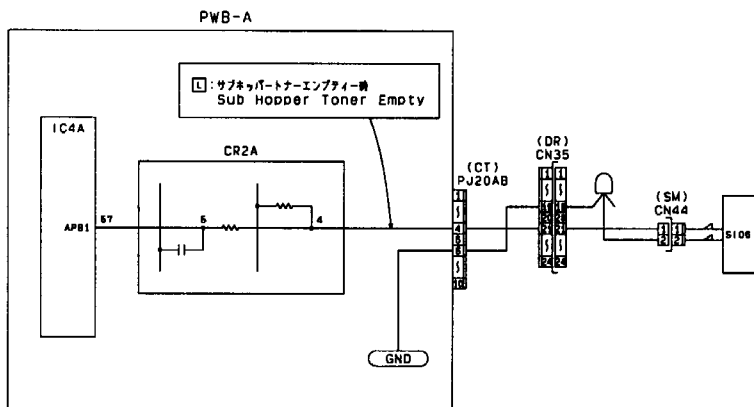


1136T60MCB

After Toner Empty Detection



1136T61MCA



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13-9. Main Hopper Toner Replenishing Mechanism/Control

- When Sub Hopper Toner Empty Switch S106 is actuated, it energizes Main Hopper Toner Replenishing Motor M8 to turn the Toner Bottle one turn, thereby supplying toner from the Main Hopper to Sub Hopper.

<Mechanism>

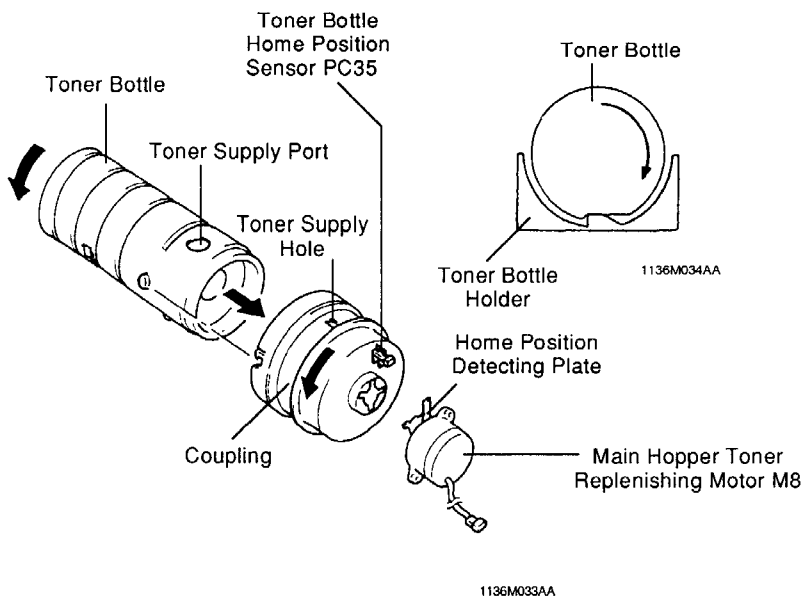
Main Hopper Toner Replenishing Motor M8 is energized.

The Home Position Detecting Plate on the M8 shaft is turned and, at the same time, the Coupling is turned.

Since the two pins on the Toner Bottle fit into the slots in the Coupling, the Coupling and Toner Bottle are turned together.

When the indentation on the Toner Bottle moves past the protrusion on the Toner Bottle Holder, the Toner Bottle is vibrated to prevent some of the toner from remaining unconsumed in the Bottle.

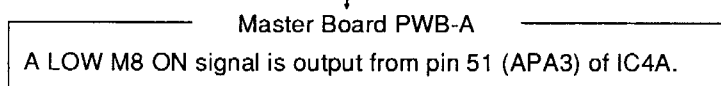
Since the Toner Supply Port in the Toner Bottle is aligned with the Toner Supply Hole in the Coupling, toner in the Toner Bottle drops down as the Supply Hole becomes located at the bottom.



<Control>

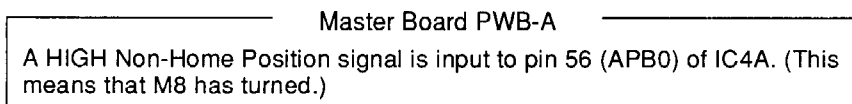
- Toner Bottle Home Position Sensor PC35 ensures that the Toner Bottle is stopped so that its Toner Supply Port is located at the top.

Sub Hopper Toner Empty Switch S106 is actuated.

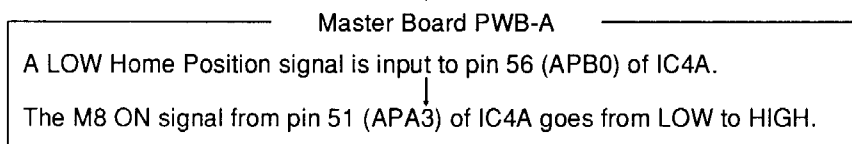


Main Hopper Toner Replenishing Motor M8 is energized.

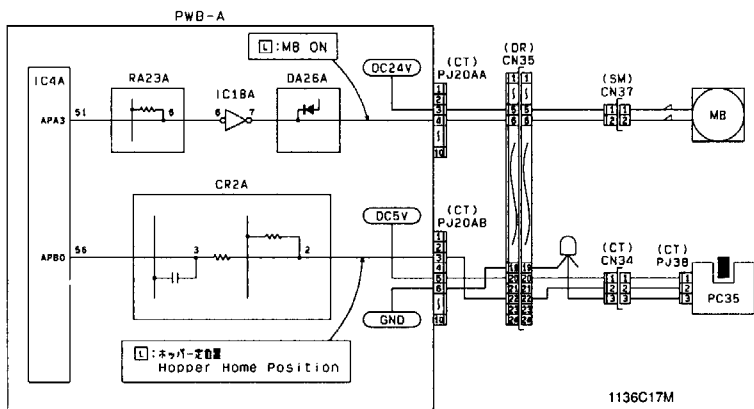
Toner Bottle Home Position Sensor PC35 is unblocked.



PC35 is blocked.



M8 is deenergized.

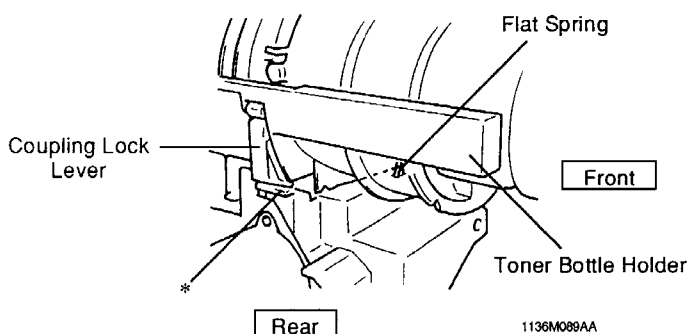


13-10. Swinging Out/In the Main Hopper

- To replace an empty Toner Bottle, the user first needs to swing the Toner Bottle Holder out 40° to the front. There is a flat spring installed on the Sub Hopper Holder, which causes the Toner Bottle Holder to click out of, and into, the locked position.
- The Holder pivots about the Toner Supply Port as it is swung out or in, which effectively prevents toner from spilling when the Holder is swung out or in. The Coupling is provided with a locking mechanism that prevents the Toner Bottle from turning when it is removed or installed.

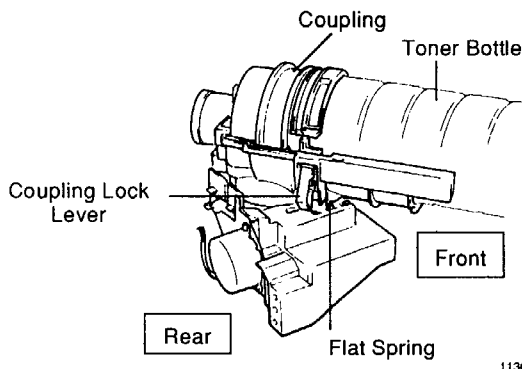
<When the Toner Bottle Holder is in Position>

- Since the flat spring fits into the front ^ notch of the Toner Bottle Holder, the Holder is locked in position. At this time, the bottom of the Coupling Lock Lever is pushed in by a part (*) of the Sub Hopper, keeping the Coupling free.



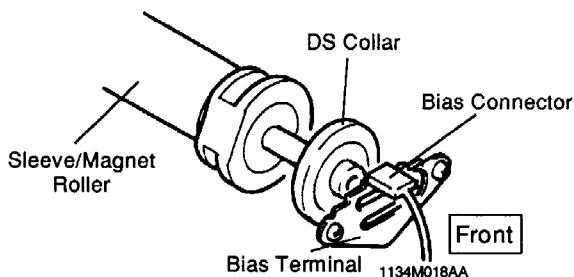
<When the Toner Bottle Holder is Swung Out>

- The Toner Bottle Holder pushes the flat spring down and moves over it until the flat spring then fits into the rear ^ notch. This locks the Toner Bottle Holder in position. At this time, the Coupling Lock Lever is free and the spring acts to lock the Coupling in position with the Lock Lever.

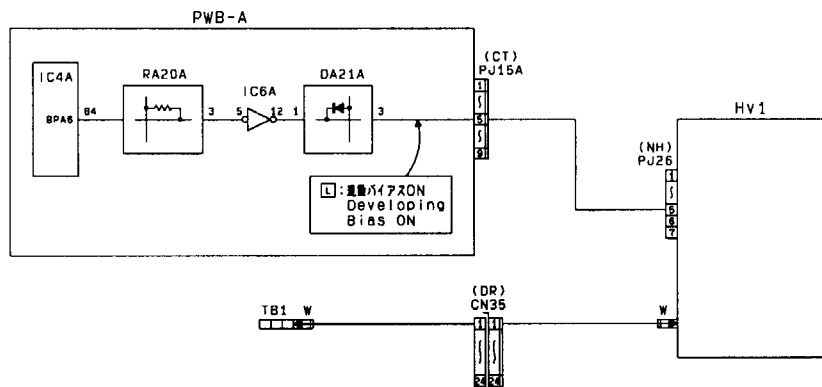
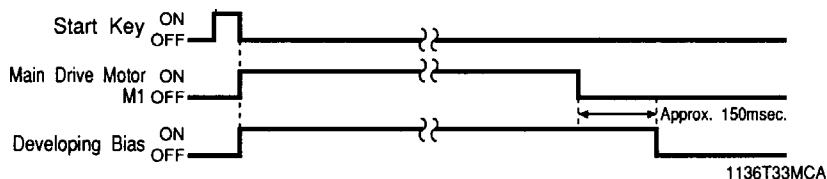


13-11. Developing Bias

- A negative voltage (V_b = Developing Bias voltage) is applied to the Sleeve Roller to prevent a foggy background on the copy. The amount of toner attracted onto the surface of the PC Drum depends on how much lower the PC Drum surface potential (V_i) is than V_b (i.e., the potential difference).
- Because the Magnet Roller of this copier is movable, a flat spring is fitted to the Bias Terminal, allowing the Bias Terminal to follow the movement of the Magnet Roller.

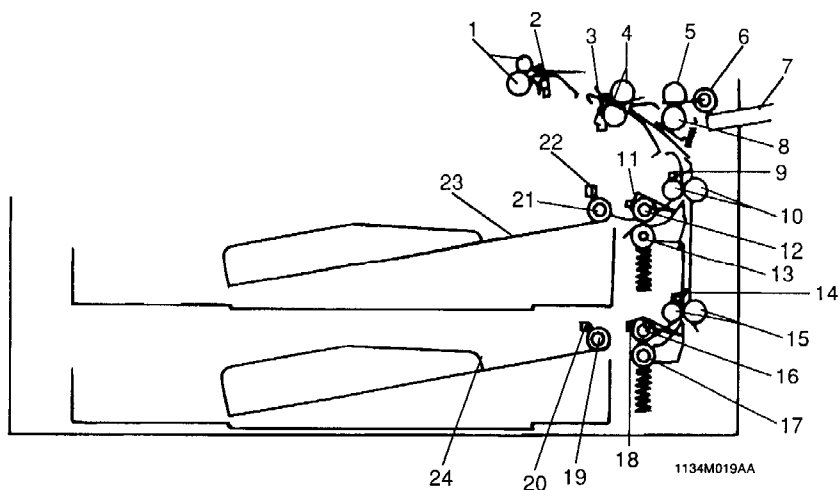


◆ Here is the control timing chart.



14 PAPER TAKE-UP/FEED SECTION

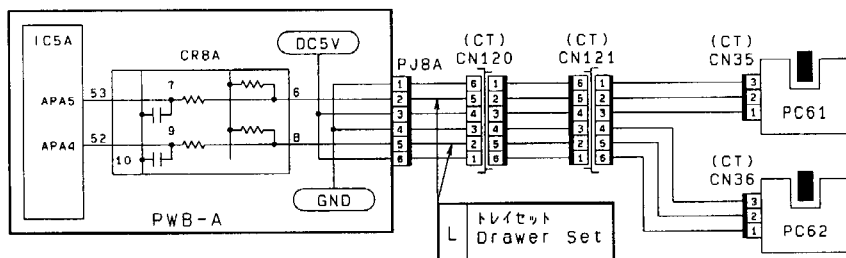
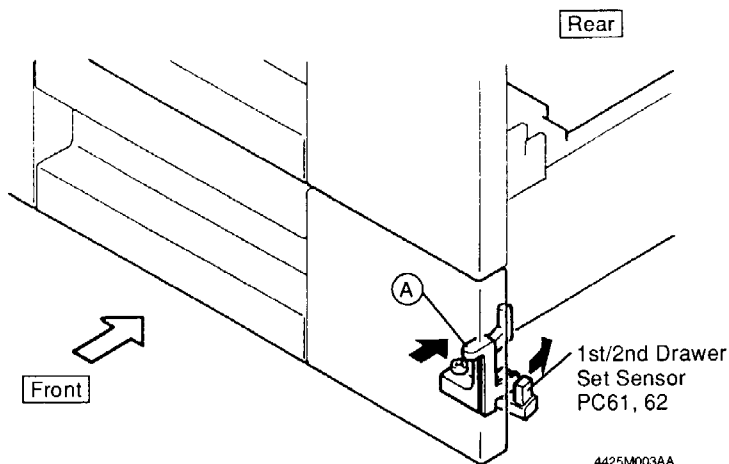
14-1. Construction



- | | |
|--|---|
| 1. Synchronizing Roller | 13. 1st Drawer Separator Roll |
| 2. Paper Leading Edge Detecting Sensor PC55 | 14. 2nd Drawer Vertical Transport Sensor PC64 |
| 3. Transport Roller Sensor PC54 | 15. Lower Vertical Transport Roller |
| 4. Transport Rollers | 16. 2nd Drawer Feed Roll |
| 5. Manual Bypass Feed Roll | 17. 2nd Drawer Separator Roll |
| 6. Manual Bypass Take-Up Roll | 18. 2nd Drawer Paper Take-Up Sensor PC57 |
| 7. Multi Bypass Table | 19. 2nd Drawer Paper Take-Up Roll |
| 8. Manual Bypass Separator Roll | 20. 2nd Drawer Lift-Up Sensor PC66 |
| 9. 1st Drawer Vertical Transport Sensor PC63 | 21. 1st Drawer Paper Take-Up Roll |
| 10. Upper Vertical Transport Roller | 22. 1st Drawer Lift-Up Sensor PC65 |
| 11. 1st Drawer Paper Take-Up Sensor PC56 | 23. 1st Drawer Paper Lifting Plate |
| 12. 1st Drawer Feed Roll | 24. 2nd Drawer Paper Lifting Plate |

14-2. Drawer-in-Position Detection

- When the drawer is slid into the copier, Drawer Set Detecting Lever A is pushed in the direction of the arrow, which blocks the Drawer Set Sensor (PC61/PC62, goes LOW).

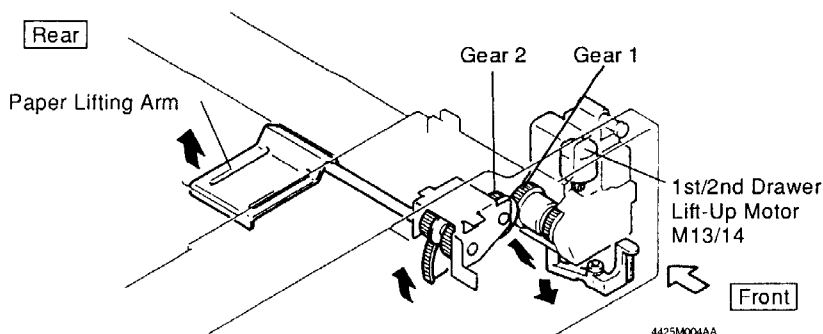


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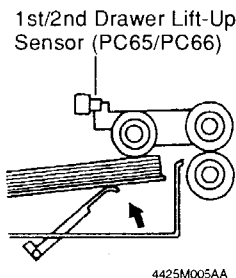
14-3. Drawer Paper Lifting/Lowering Mechanism/Control

(1) Metric Areas

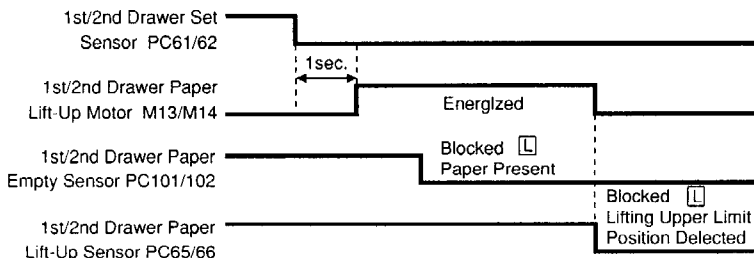
- The paper lifting mechanism raises the paper in the drawer so that the top of the paper stack is pressed against the Paper Take-Up Roll at a constant pressure.
- When slid into the copier, the drawer presses the Drawer Set Lever which engages Lift-Up Motor Gear 1 with Paper Lifting Arm Gear 2.
- At the same time, the Drawer Set Sensor (PC61/PC62) is blocked (goes LOW) and after 1msec., the Lift-Up Motor (M13/M14) starts turning, causing the Paper Lifting Arm to raise the Paper Lifting Plate.
- When the drawer is slid out, Lift-Up Motor Gear 1 is disengaged from Paper Lifting Arm Gear 2, lowering the Paper Lifting Plate.



When Drawer is Slid in

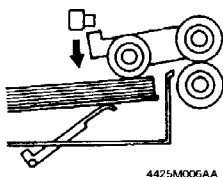


- The Paper Lifting Arm further raises the paper after the top sheet of paper is pressed against the Paper Take-Up Roll. As the light blocking plate blocks the Lift-Up Sensor (goes LOW), the Lift-Up Motor (M13/M14) stops.

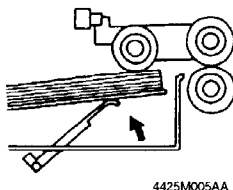


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During Copying

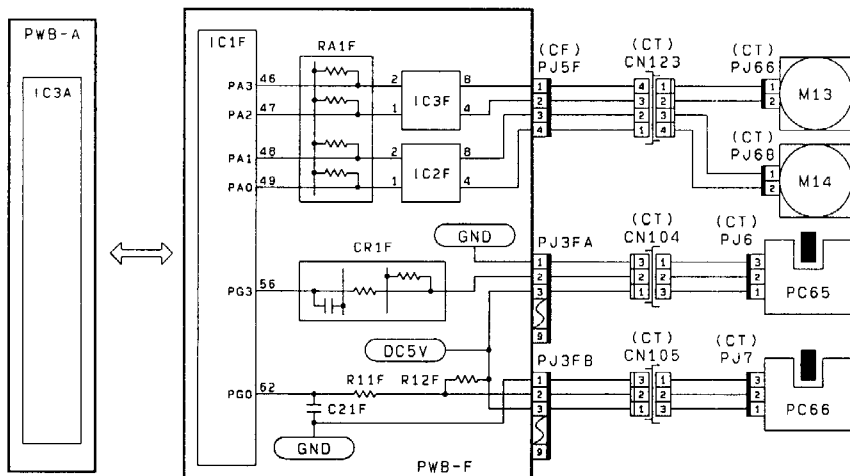


- As sheets of paper are used, the Paper Take-Up Roll lowers accordingly, unblocking the Lift-Up Sensor (PC65/66, goes HIGH).



- The Lift-Up Motor (M13/14) starts running, raising the paper stack until the Lift-Up Sensor (PC65/66) is blocked (output goes LOW).

- Energizing and deenergizing of the Lift-Up Motor keeps constant the pressure between the Paper Take-Up Roll and paper regardless of the height of the paper stack.



1134C03MCA

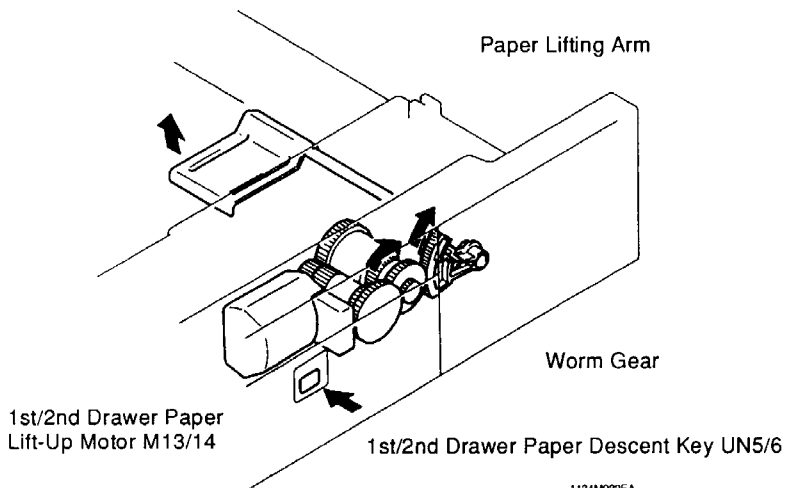
(2) Inch Areas

<Paper Stack Lifting>

- When the Paper Descent Key (UN5/6) is pressed*¹ after the drawer has been slid into the copier, it energizes the Lift-Up Motor (M13/14) and the motor starts turning forward.
- The rotation of the motor is transmitted via a gear train to the worm gear and the Paper Lifting Arm mounted on the same shaft as the worm gear raises the Paper Lifting Plate. This raises the paper stack.
- When the top of the paper stack is pressed against the Paper Take-Up Roll and the paper stack is further raised, the light blocking plate of the Paper Take-Up Roll Assy blocks the Lift-Up Sensor (PC65/66). This deenergizes the Lift-Up Motor and the paper stack raising motion is completed.
- As the paper is consumed and the top level of the paper stack lowers, the Lift-Up Sensor is unblocked. Then, the Lift-Up Motor is energized again to raise the paper stack until the Lift-Up Sensor is blocked again. This means that a constant pressure is maintained between the paper and the Paper Take-Up Roll regardless of the amount of paper still available for use.

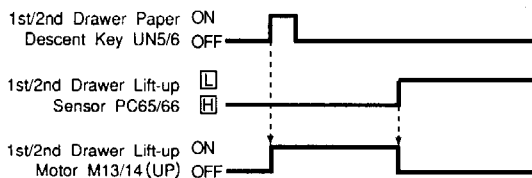
*1: The Lift-Up Motor is energized at the following timings, in addition the press of the Paper Descent Key (UN5/6).

- Turning ON the Power Switch
 - Opening and closing the door
 - Operating the panel
 - Detecting a sheet of paper on the Multi Bypass Table
 - Detecting an original in the AFR-9
 - Raising and lowering the Original Cover, etc.



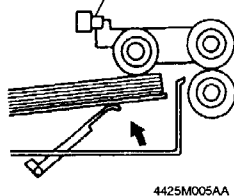
- Paper lifting timings are as follows.

When Drawer is Slid in



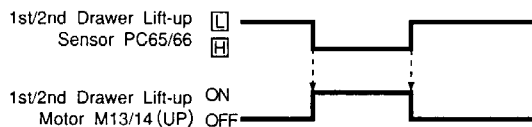
1136T63MCA

1st/2nd Drawer Lift-Up Sensor PC65/66

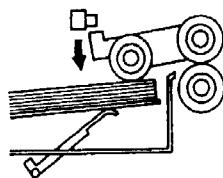


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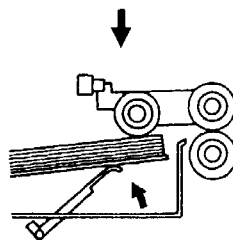
During Copying



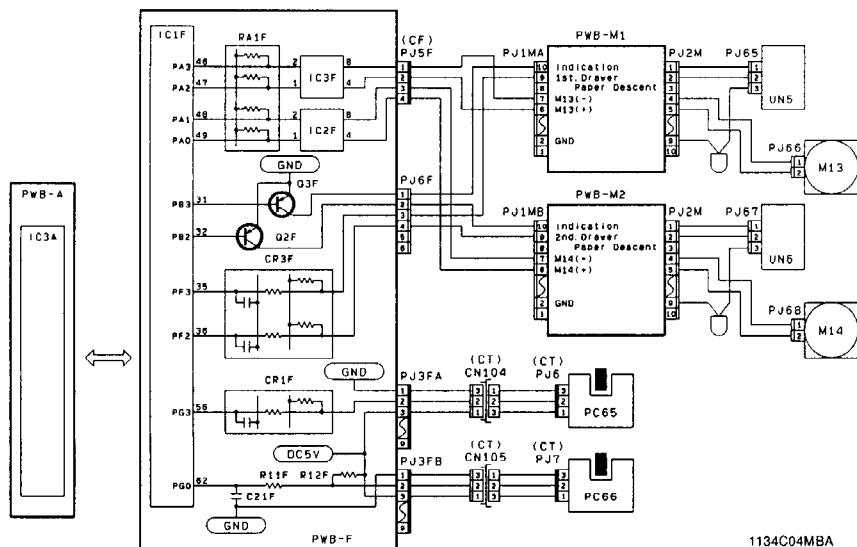
1136T64MCA



4425M006AA



4425M005AA

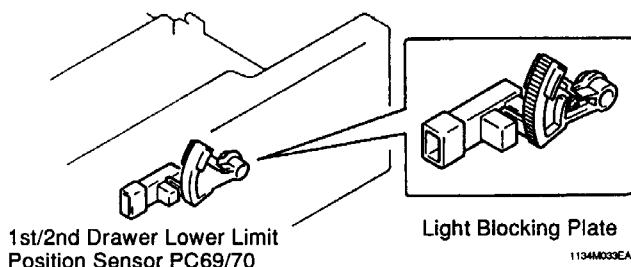


1134C04MBA

<Paper Stack Lowering/Drawer Lock>

◆ Paper Stack Lowering

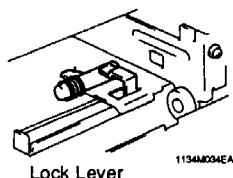
- When the Paper Descent Key (UN5/6) is pressed or the drawer runs out of paper during a copy cycle, the Lift-Up Motor (M13/14) is energized to turn backward.
- The rotation of the motor is transmitted via a gear train to the worm gear and the Paper Lifting Arm mounted on the same shaft as the worm gear lowers.
- When the Lower Limit Position Sensor (PC69/70) is blocked by the light blocking plate of the worm gear, it deenergizes the Lift-Up Motor (M13/14). This completes the paper stack lowering motion. (At a paper-empty condition)
- When the Paper Descent Key (UN5/6) is pressed, the Lift-Up Motor is deenergized when the Lower Limit Position Sensor (PC69/70) is unblocked after it has been blocked. This unlocks the drawer. (For more details, see "Drawer Locking Mechanism" that follows.)



◆ Drawer Locking Mechanism

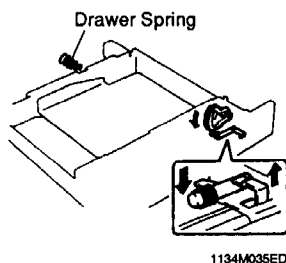
When Drawer is Slid in

Drawer Guide Frame



- The Lock Lever on the bottom of the drawer contacts the Drawer Guide Frame of the copier and then slides over the frame.
- The drawer is locked in the copier when the Lock Lever drops into the slot in the Drawer Guide Frame.

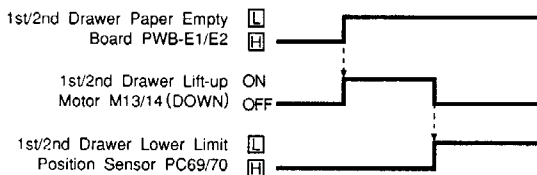
When Drawer is Unlocked



- Pressing the Paper Descent Key (UN5/6) starts the paper lowering motion.
- The worm gear is turned downward until its light blocking plate has passed through and below the Lower Limit Position Sensor (PC69/70), blocking and then unblocking it. This is so the worm gear can reach down low enough to push the Lock Lever downward and unlock the drawer.
- When the drawer is unlocked, the Drawer Spring in the rear of the drawer pushes the drawer out to the front approx. 70 mm.
- Once the drawer is pushed out, the drawer Set Sensor (PC61/62) is unblocked. This reverses the Lift-up Motor (M13/14) and briefly turns the worm gear upward until its light blocking plate reblocks the Lower Limit Position Sensor (PC69/70), returning the Lock Lever to the locking position.

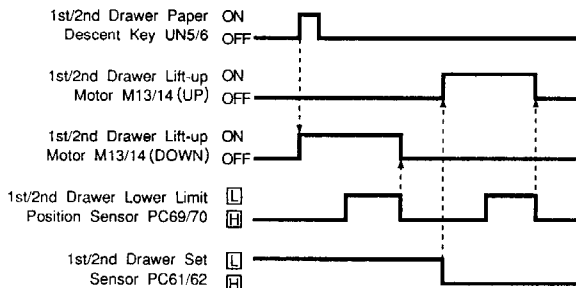
- ◆ Here are the timings for the paper stack lowering and drawer locking motions.

At Paper Empty

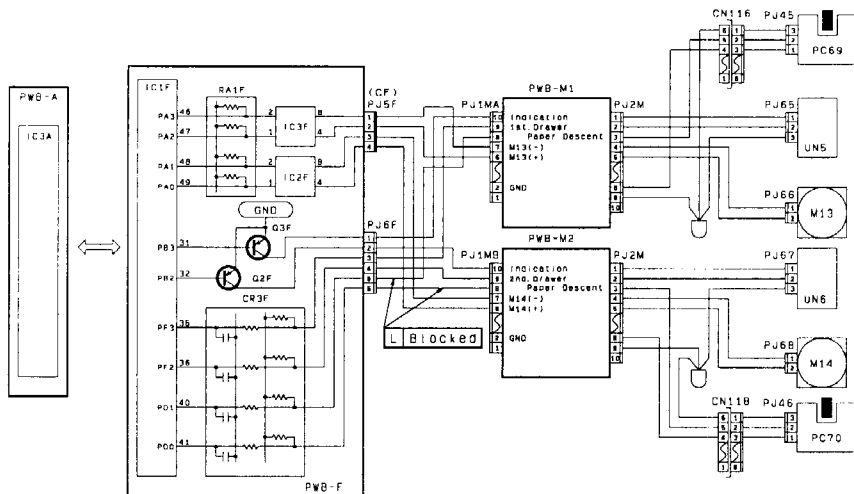


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When 1st/2nd Drawer Paper Descent Key UN5/6 is Pressed



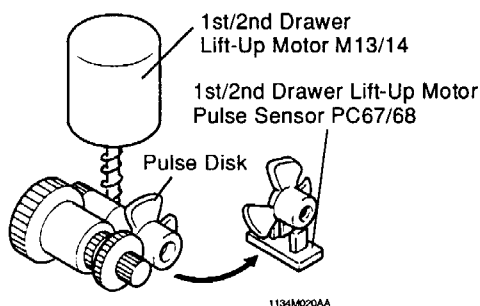
1136T66MCA








1134C05MBA

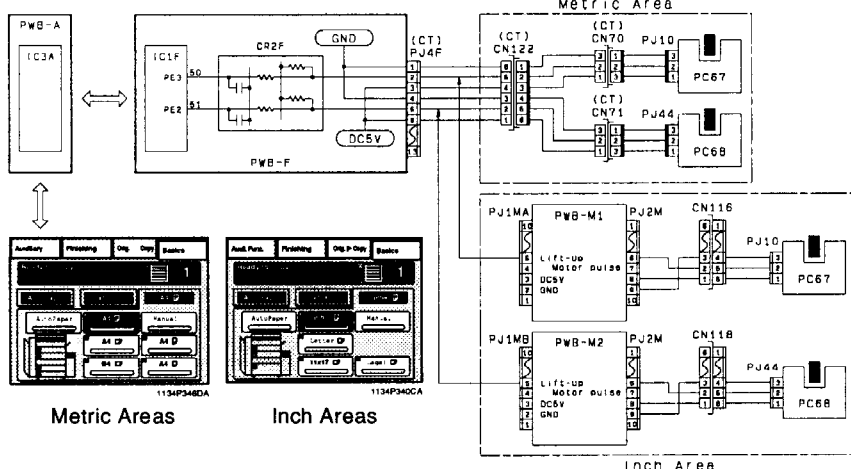
14-4. Paper Level Detection

- The amount of paper still available for use, or the paper level, of the 1st and 2nd Drawer is detected by 1st/2nd Drawer Lift-Up Motor Pulse Sensor PC67/68 and a pulse disk.
- The pulse disk is mounted on the shaft of the intermediary gear that transmits drive from the Lift-Up Motor (M13/14). The speed of the pulse disk varies with different paper levels and the number of pulses detected by the Lift-Up Motor Pulse Sensor (PC67/68) is used to determine the paper level.
- Counting of the number of pulses is started when the Lift-Up Motor (M13/14) is energized and continues until the output from the Lift-Up Sensor (PC65/66) goes LOW. The total number of pulses is translated into the amount of paper which is shown on the Touch Panel as a graphic marker in units of 50 sheets of paper.
- As the paper is consumed and the top level of the paper stack lowers, the Lift-Up Motor is energized to raise the paper stack. During this time, the Lift-Up Motor Pulse Sensor (PC67/68) detects pulses and that pulse count is accumulated. When the count reaches 50 sheets of paper, one segment of the paper level indicator on the Touch Panel goes out.



*Paper Level Indicator

• 1 to 50 sheets		1134M058AA
• 50 to 200 sheets		1134M059AA
• 200 to 350 sheets		1134M060AA
• 350 to 500 sheets		1134M061AA
• 500 sheets up		1134M062AA

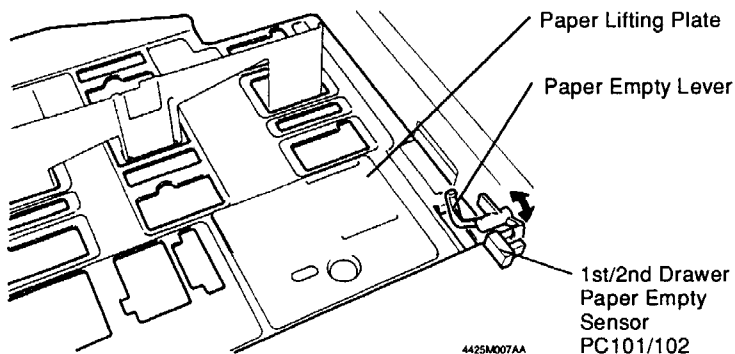


1134C07MBA

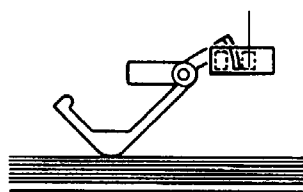
14-5. Paper Empty Detection

(1) Metric Areas

- A paper empty condition in the 1st and 2nd Drawers is detected by 1st Drawer Paper Empty Sensor PC101 and 2nd Drawer Paper Empty Sensor PC102, respectively, installed in the paper take-up area of each drawer.
- When the drawer, with no paper loaded in it, is harshly slid out of the copier, the Paper Empty Lever can hit against the Paper Lifting Plate. To prevent this from occurring, the Paper Empty Lever is tilted in the direction of sliding.



PC101/102 (blocked)

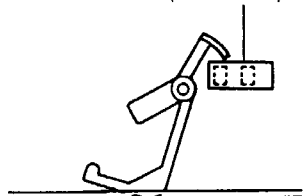


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Paper Present

The paper stack raises the Paper Empty Lever which blocks PC101/102 (goes LOW).

PC101/102 (unblocked)



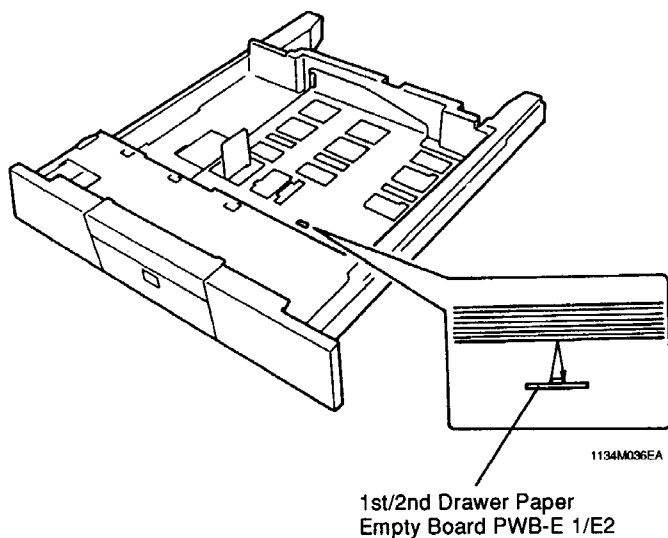
4425M009AA

Paper Not Present

The light blocking plate of the Empty Lever clears PC101/102 which goes HIGH.

(2) Inch Areas

- A paper empty detection in the 1st and 2nd Drawers is detected by 1st Drawer Paper Empty Board PWB-E1 and 2nd Drawer Paper Empty Board PWB-E2, respectively, installed on the underside of the Paper Lifting Plate.
- The board is provided with a reflector type photosensor. When the drawer is loaded with paper, the photosensor is activated by the light reflected off the paper. The copier then considers that there is paper in the drawer.
- If no paper is loaded, the copier considers that the drawer is paper-empty and, at the same time, the Lift-Up Motor (M13/14) starts turning backward to lower the Paper Lifting Plate.
- When a paper-empty condition is detected during a multi-copy cycle and if there is another paper source (including options) loaded with paper of the same size and in the same direction, the copier automatically selects that second paper source to ensure an uninterrupted copy cycle (Automatic Drawer Switching).



(3) Control for 1st/2nd Drawer Paper Empty Detection

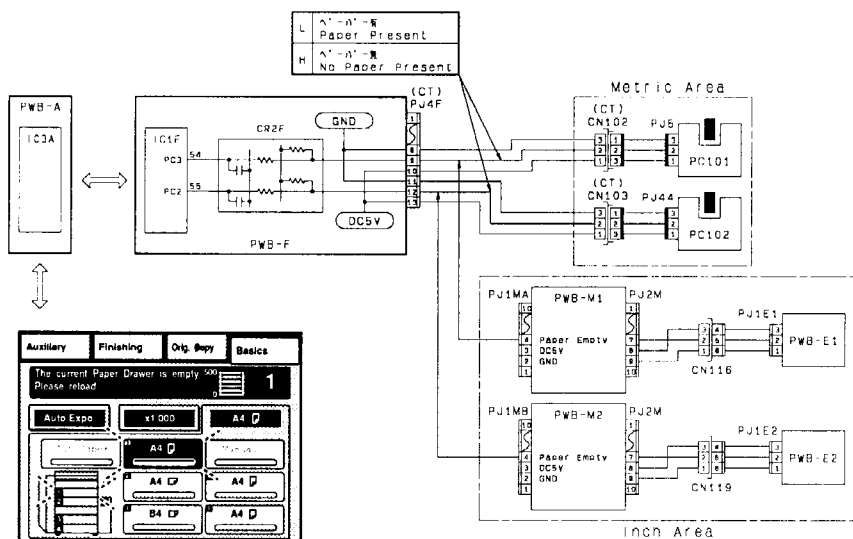
The output of 1st/2nd Drawer Paper Empty Sensor PC101/102 (Metric Areas) and 1st/2nd Drawer Paper Empty Board PWB-E1/E2 (Inch Areas) goes HIGH.

S/P Board PWB-F

A HIGH Paper Empty signal is fed to pin 54/55 of IC1F.

The Paper Empty signal is sent to Master Board PWB-A.

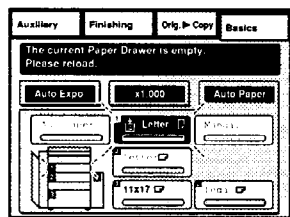
The paper empty message appears on the Touch Panel.



Metric Areas

1134P417EA

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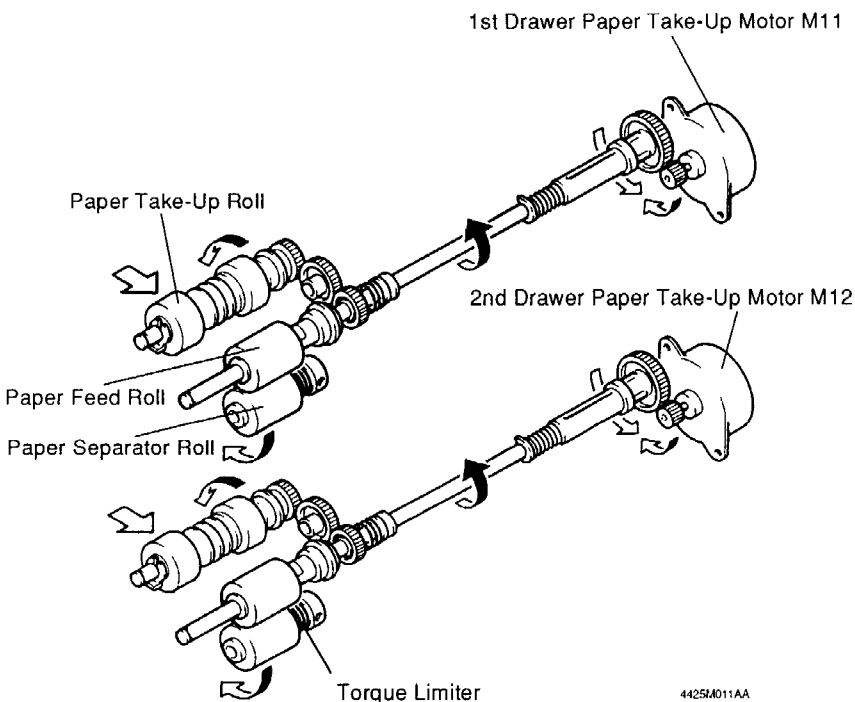
Inch Areas

1134P350EA

14-6. Paper Take-Up Mechanism

(1) Paper Take-Up Mechanism

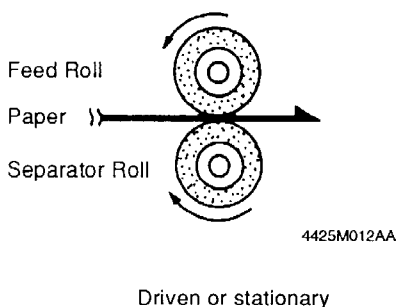
- The paper take-up and feeding mechanism takes up paper from the drawer and feeds it to the Vertical Transport Roller.
- The take-up mechanism is driven by 1st/2nd Drawer Paper Take-Up Motor M11/M12.
- Each paper take-up mechanism consists of a Paper Take-Up Roll, Feed Roll and Separator Roll with torque limiter.
- The Separator Roll is controlled by the torque limiter so that it will not transport more than one sheet of paper at a time.
- The wider Paper Take-Up Roll assures straight paper transport.



(2) Paper Separating Mechanism

- The paper separating mechanism ensures that only the top sheet of paper is fed in by separating the second sheet of paper from the top one.
- This is accomplished by the difference in friction coefficient between the Feed and Separator Rolls.

<Normal Feeding>

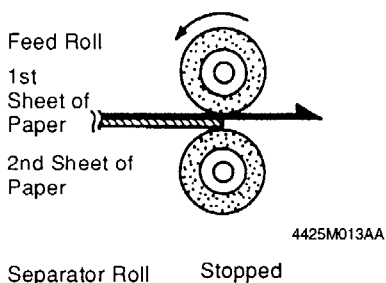


- When only one sheet of paper is fed, the friction coefficient on the top side of the paper is equal to that on the underside.

Driven by the Feed Roll, the paper drives the Separator Roll. This causes the paper to be sent to the Vertical Transport Section.

- The friction coefficient varies for different ambient conditions and types of paper being used, which often causes the Separator Roll to be stationary.

<Double Feeding>

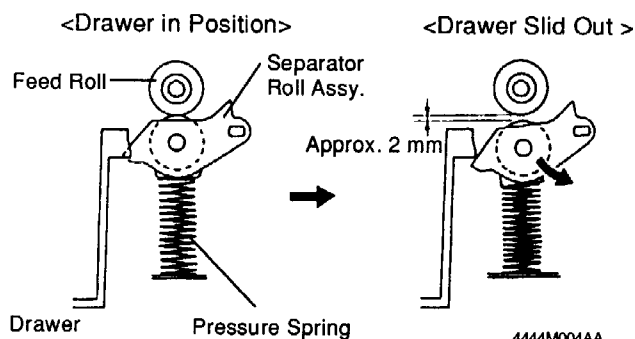


- Since the coefficient of friction between the top side of the first sheet of paper and the Feed Roll is greater than that between the first and second sheets of paper, the first sheet of paper is fed into the copier by the Feed Roll.

Since the friction coefficient between the second sheet of paper and the Separator Roll is greater than that between the first and second sheet of paper, the Separator Roll is not driven and holds the second sheet of paper.

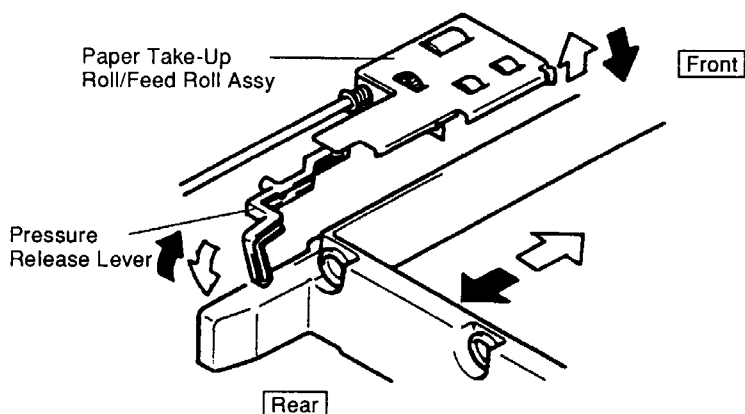
(3) Paper Pressure Releasing Mechanism

- If the drawer is pulled out while the paper is between the Feed Roll and the Separator Roll, the paper is left in the copier. Removal of the paper is difficult. With this copier, sliding out the drawer automatically disengages the paper and Paper Take-Up/Feed Roll.
- The Paper Pressure Releasing Mechanism makes it easier to remove a sheet of paper held between the Feed Roll and Paper Separator Roll by just sliding out the drawer. When the drawer is pulled out, the pressure release rail pushes down the Separator Roll Assy, disengaging the Feed Roll from the Separator Roll.



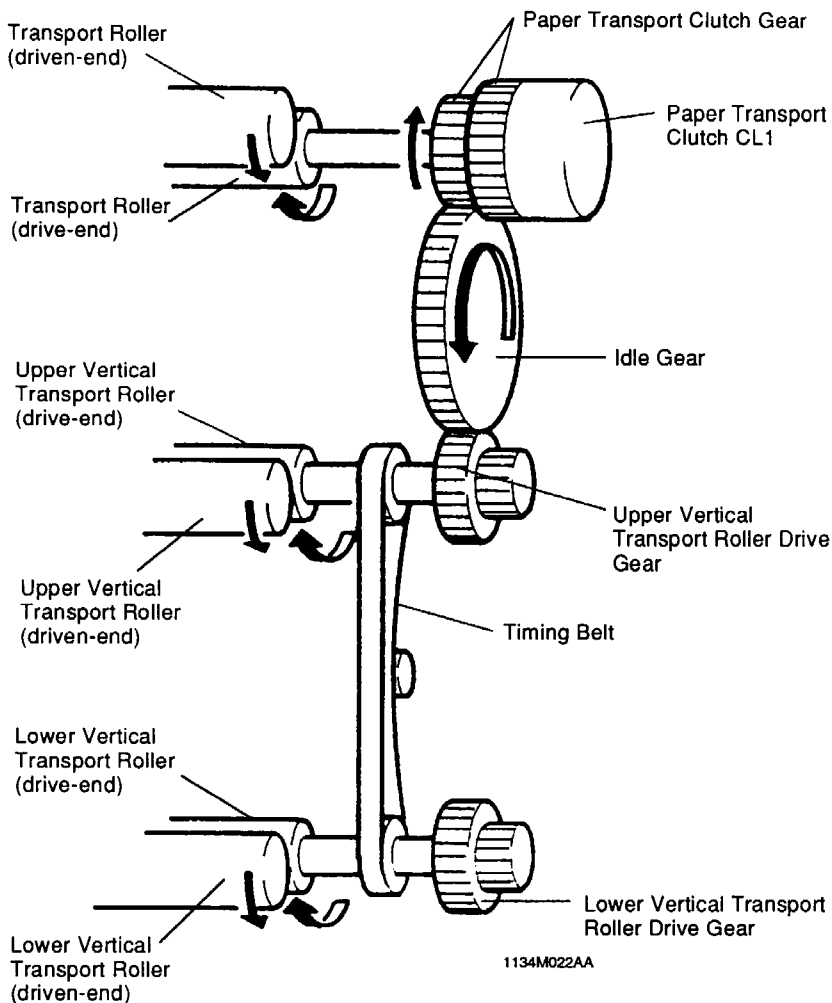
(4) Paper Take-up Roll Retract Mechanism

- When the drawer is slid out, the rear end of the drawer on the take-up side and the Pressure Release Lever push up the Paper Take-Up Roll/Feed Roll, freeing the paper from the Paper Take-Up Roll.



14-7. Vertical Transport Drive Mechanism

The Transport Roller (drive-end) is turned by Main Drive Motor M1 via a timing belt and gear train. Since the Transport Roller is coupled by way of an idle gear to the Vertical Transport Roller (drive-end), the Vertical Transport Roller is turned as the Transport Roller turns.

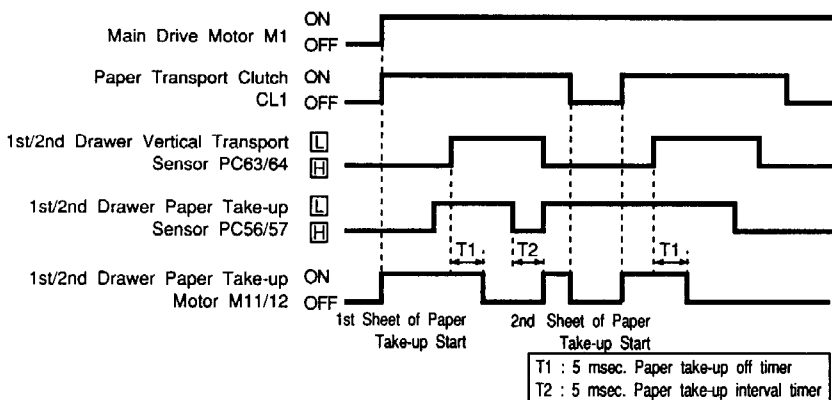


14-8. Paper Take-Up Control

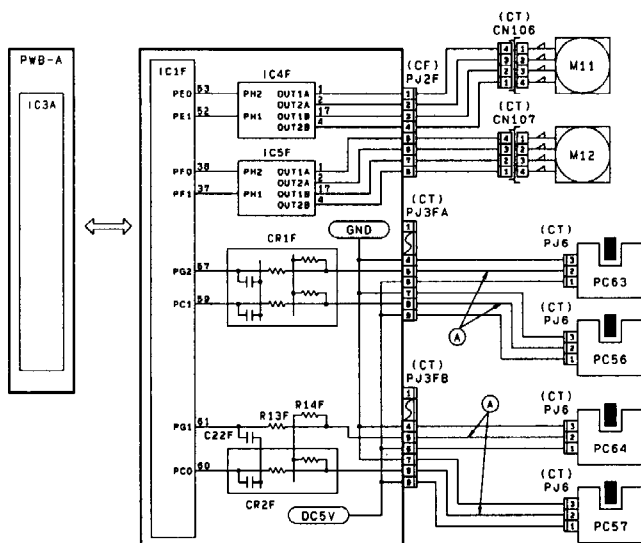
(1) Paper Take-Up Motor Control

- A stepping motor is used for 1st/2nd Drawer Paper Take-Up Motor M11/12. The pulse signals output from pins 1, 2, 17, and 4 of IC4F (M11) and pins 1, 2, 17, and 4 of IC5F (M12) are applied to the four internal coils of the motor to control the rotation of the motor. These signals are output via S/P Board PWB-F as controlled by Master Board PWB-A.

<Multi-copy cycle for 2 copies>



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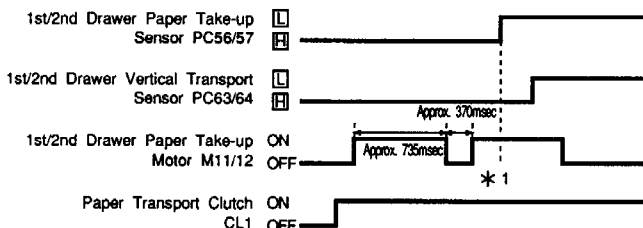


L	遮光時 Blocked
H	遮光時 Not Blocked

1134C10MCA

(2) Paper Take-Up Retry Control

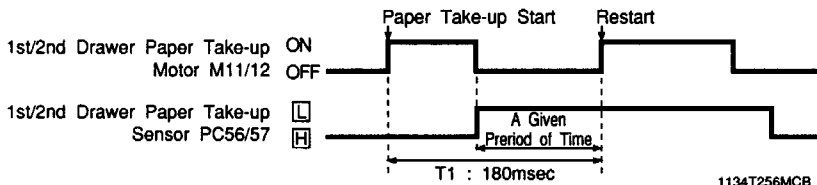
- To minimize the occurrence of paper misfeed due to a slippery Paper Take-Up Roll, the Paper Take-Up Motor (M11/12) is kept deenergized for 370 msec. before it is energized again, if a sheet of paper fails to reach the Paper Take-Up Sensor (PC56/57) even after the lapse of 735 msec. after the motor has first been energized. (This is called the paper take-up retry function.)
- A paper misfeed results if the sheet of paper does not reach the Paper Take-Up Sensor even after two paper take-up sequences.



*1: The copier determines that there is a paper misfeed if the output from the Paper Take-Up Sensor does not go LOW even after the lapse of approx. 2.93 sec. after the paper take-up retry motion.

(3) Paper Take-Up Interval Control

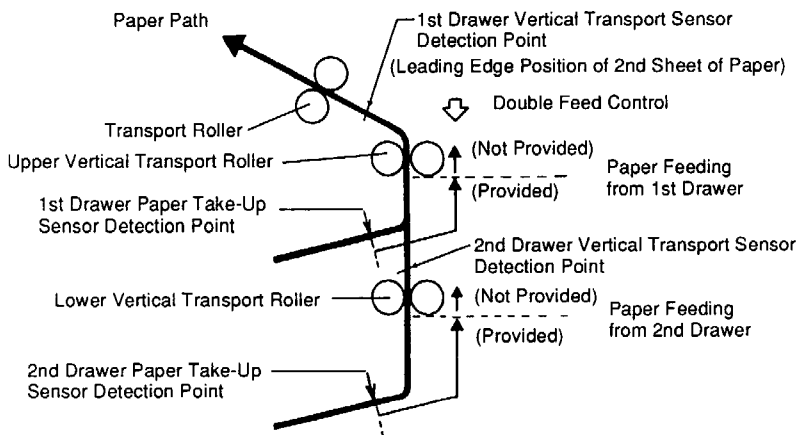
- The Paper Feed Roll and Separator Roll may sometimes fail to separate the subsequent sheet of paper properly and the leading edge of that paper may be ahead of the Feed and Separator Rolls inside the copier. If the Paper Take-Up Roll is started for the new paper take-up sequence in this condition, the distance between the preceding and the current sheet of paper will become shorter than normal, resulting in a misfeed.
- To maintain a given paper take-up interval, therefore, this copier provides the following control, thereby preventing a paper misfeed.
- It normally takes approx. 180 msec. or more for the paper to block the Paper Take-Up Sensor (PC56/57) (LOW) after the Paper Take-Up Motor (M11/12) has been energized. If this timing is less than 180 msec., the motor is deenergized temporarily and, after a given period of time, it is energized again to provide a good interval between two paper take-ups. (This is called the paper take-up interval control.)



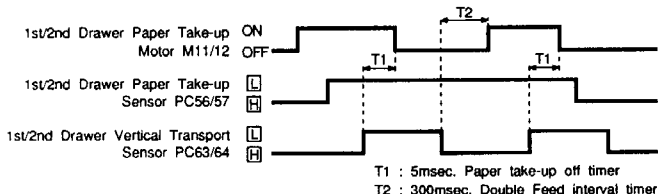
T1: Time it normally takes the paper to reach the Paper Take-Up Sensor (PC56/57) after the Paper Take-Up Motor (M11/12) has been energized, excluding that during which Paper Transport Clutch CL1 remains energized.

(4) Double Feed Control

- Even if the Paper Take-Up Roll takes up two sheets of paper at one time, the double feed control uses the second sheet of paper for the next copy cycle without causing a paper misfeed. It eliminates a paper misfeed that would otherwise result when two sheets of paper are taken up at once.
- If the second sheet of paper is stationary, blocking the Paper Take-Up Sensor (PC56/57), when the trailing edge of the first sheet of paper moves past the Vertical Transport Sensor (PC63/64), the copier determines that it is a double feed condition and provides double feed control.
- If, however, the second sheet of paper has reached the Vertical Transport Roller (paper feeding from the 1st Drawer: Upper; paper feeding from the 2nd Drawer: Lower), the double feed control is not provided since the paper is fed further into the copier by the Vertical Transport Roller. This could result in a paper misfeed or the second sheet of paper being fed through the copier with the first one.
- If double feed control is provided, it results in the paper take-up interval timer becoming longer. That means longer intervals between two successive paper take-up motions, resulting in a decreased cpm (productivity).



1134M065AA



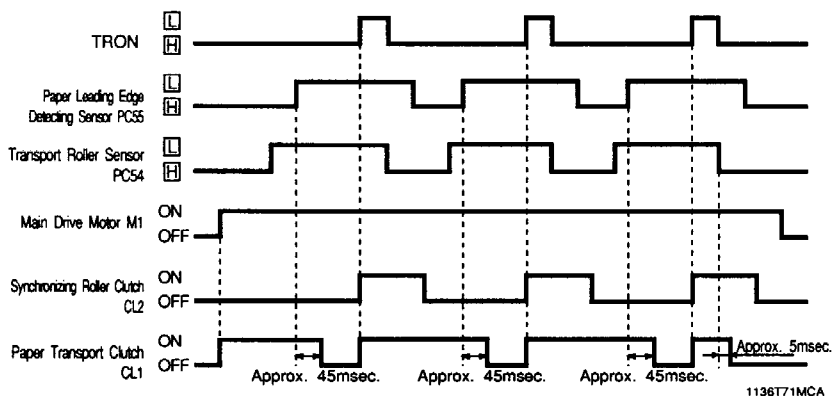
1134T257MCA

(5) Vertical Transport Drive Control

- The Transport Roller and Vertical Transport Roller are turned by turning ON and OFF the Paper Transport Clutch signal output from pin82 of IC4A or Master Board PWB-A.

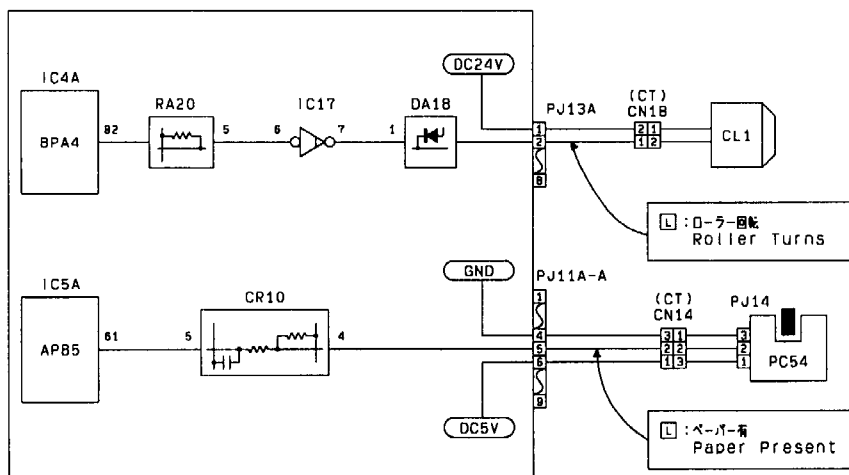
The output from Transport Roller Sensor PC54 is used for the control of paper take-up timings.

Paper Transport Clutch CL1 is energized and deenergized at the following timings.



1136T71MCA

PWB-A

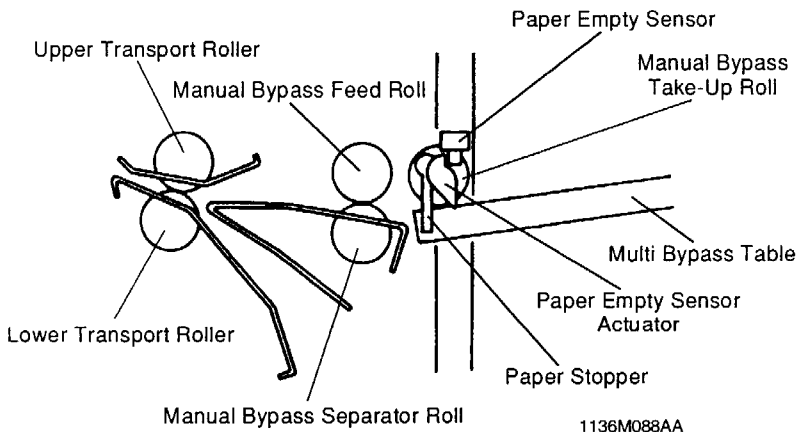
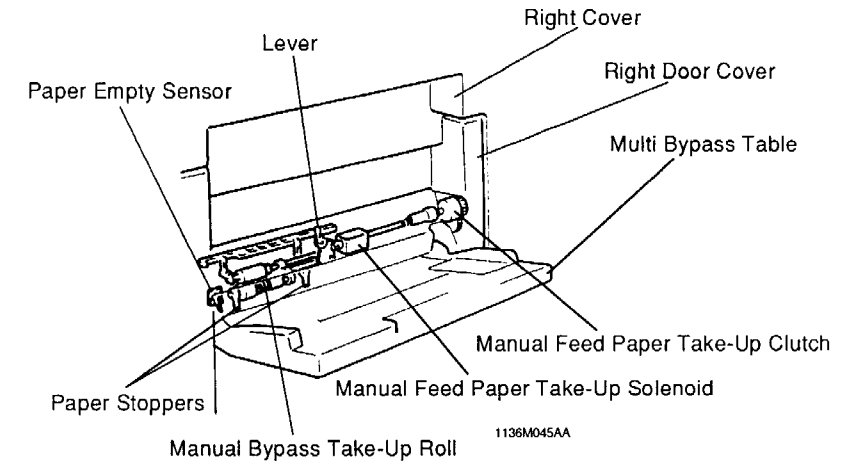


1136C24M

14-9. Multi Bypass Table

(1) Construction

The Multi Bypass Table is fitted to the Right Door of the copier, integrated into the copier. It is constructed as follows.

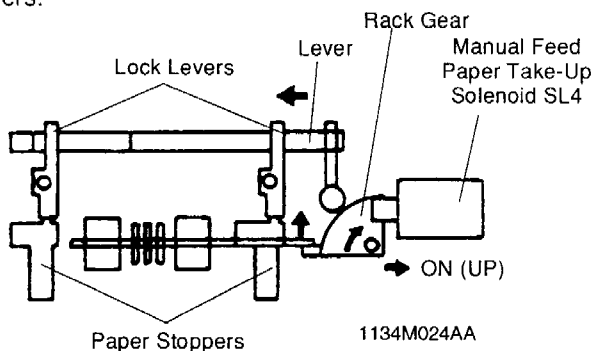


(2) Paper Take-Up Mechanism

- The Paper Take-Up Rolls are normally in their raised (retracted) position so that they will not hamper proper loading of paper. When the Start Key is pressed, Manual Feed Paper Take-Up Solenoid SL4 is deenergized causing the Manual Bypass Take-Up Rolls to press the paper stack downward and take up a sheet of paper.
- There are the Paper Stoppers provided that block the leading edge of the paper as it is loaded on the Table, preventing any portion of the leading edge of the paper from getting inside. These Stoppers are unlocked at paper take-up, allowing paper into the copier.

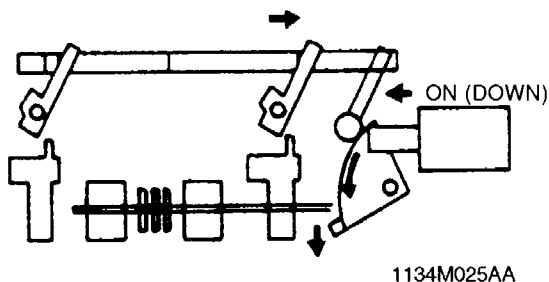
(In Standby)

- When SL4 is energized (Up side), the rack gear is pulled, which raises the Paper Take-Up Rolls releasing the paper. At the same time, the lever is moved to the left, which causes the Lock Levers to lock the Paper Stoppers.



(At Take-Up)

- When SL4 is energized (Down side), the Rack Gear is pushed, freeing the Paper Take-Up Rolls. This allows the Paper Take-Up Rolls to press the paper stack downward. At the same time, the lever is moved to the right, freeing the Paper Stoppers.



(3) Take-Up/Feed Rolls Drive Mechanism

Drive is transmitted to the Multi Bypass Table as follows.

The gear mounted on the Lower Transport Roller shaft is turned by the drive from Main Drive Motor M1. ... (1)

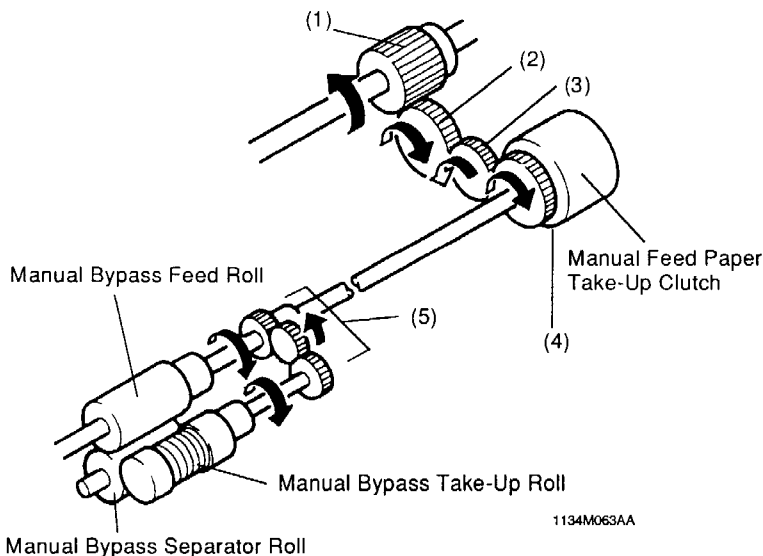
↓
The drive is transmitted to the idle gear mounted to the copier frame. ... (2)

↓
When the Right Door is closed, the idle gear on the Multi Bypass Table meshes with gear (2) and drive is transmitted to the Multi Bypass Table. ... (3)

↓
Drive is transmitted to the gear on Manual Feed Paper Take-Up Clutch CL3. ... (4)

↓
The Manual Bypass Feed Roll mounted on the same shaft as CL3 is turned. Drive is then transmitted via the gear on the same shaft as the Manual Bypass Feed Roll and idle gear to the Manual Bypass Take-Up Rolls. ... (5)

* The gears in the following illustration are keyed to the description of the operations given above.

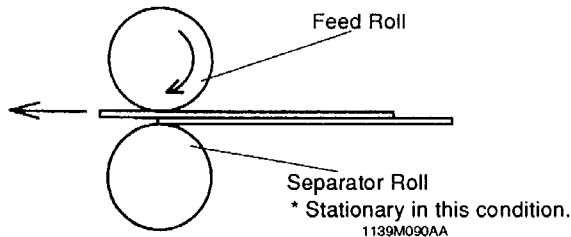


(4) Manual Bypass Paper Separating Mechanism

The paper separating mechanism ensures that only the top sheet of paper is fed in by separating the second sheet of paper from the top one. This is accomplished by the Torque Limiter fitted to the Separator Roll shaft which stops the Separator Roll when there is a change in friction between the Feed and Separator Rolls.

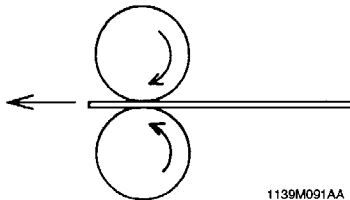
1. At the Time of Double Feed:

The top sheet of paper is fed into the copier by the Feed Roll. Since the coefficient of friction between the top and second sheets of paper is smaller than that between the second sheet of paper and the Separator Roll, the two sheets of paper slip and the second sheet of paper is not fed into the copier. The driving force of the Feed Roll is at this time neutralized by the two slipping sheets of paper and not transmitted to the Separator Roll which is stopped by its Torque Limiter. In other words, the force of the Torque Limiter is greater than the driving force of the Feed Roll as it is transmitted through the two sheets of paper.



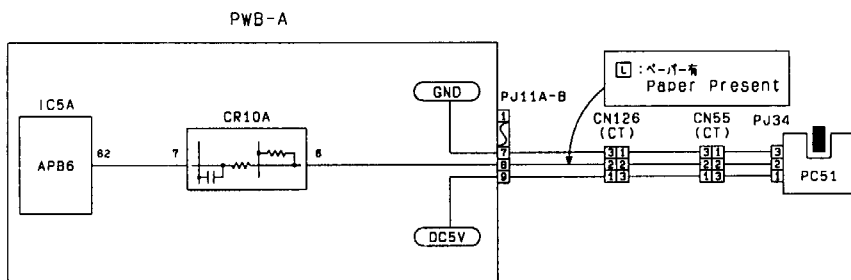
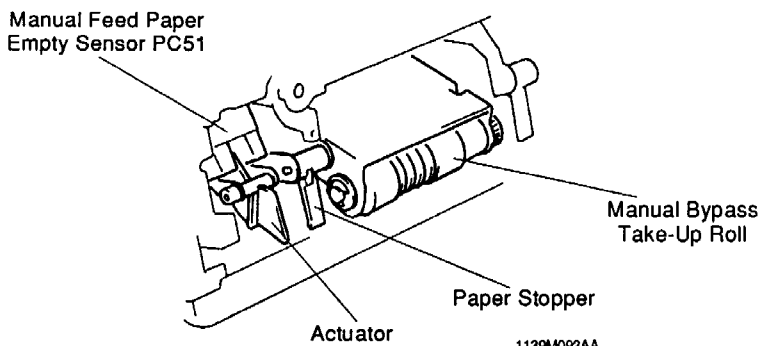
2. Normal Feeding:

The friction coefficient on the top side of the paper is equivalent to that on the underside. Hence, the driving force of the Feed Roll is directly transmitted to the Separator Roll through the paper, causing the Separator Roll to be turned by the Feed Roll. In other words, the force of the Torque Limiter is smaller than the driving force of the Feed Roll as it is transmitted through the paper.



(5) Manual Bypass Paper Empty Detection

The Multi Bypass Table is equipped with Manual Feed Paper Empty Sensor PC51 which detects a sheet of paper on the Multi Bypass Table. Since PC51 is used to determine that a paper stack is placed in position on the Multi Bypass Table, it is activated when the leading edge of the paper stack is pressed against the Paper Stoppers.



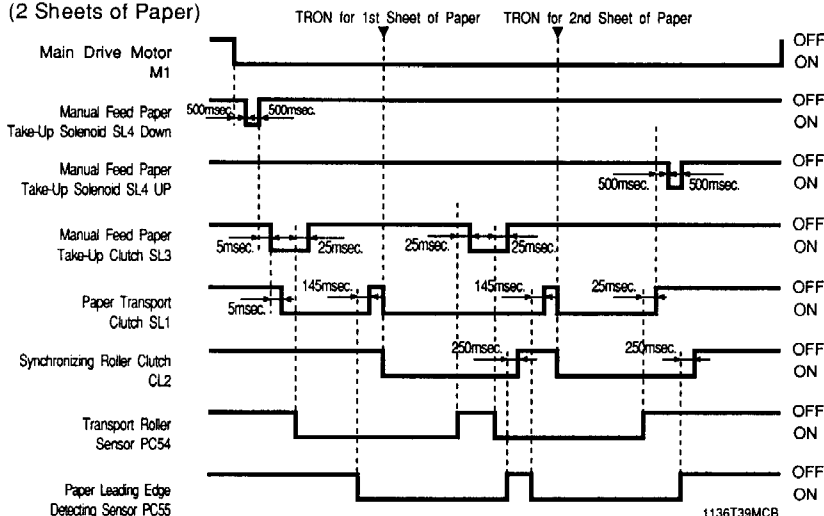
1136C23M

(6) Manual Bypass Take-Up Roll Control

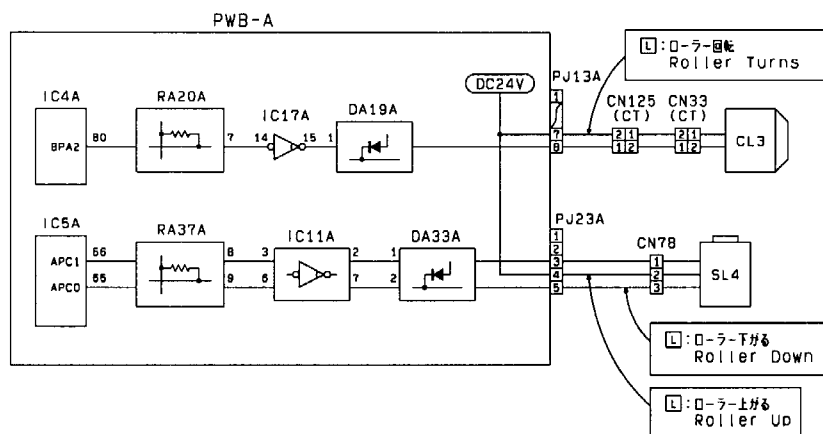
The Manual Bypass Take-Up Rolls are pressed against, and released from, the paper stack and the Manual Bypass Take-Up/Feed Rolls are turned by operating the clutches and solenoids with the signals from Master Board PWB-A. See the circuit diagram below.

Operation timing is as follows.

(2 Sheets of Paper)



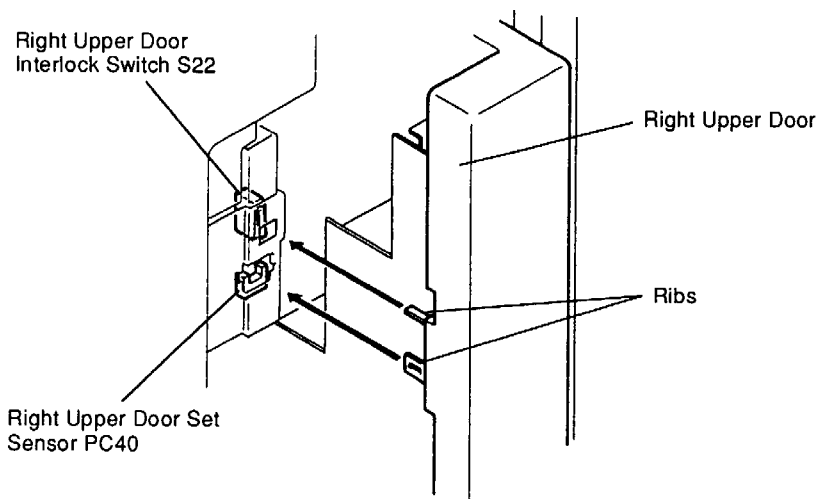
1136T39MBC



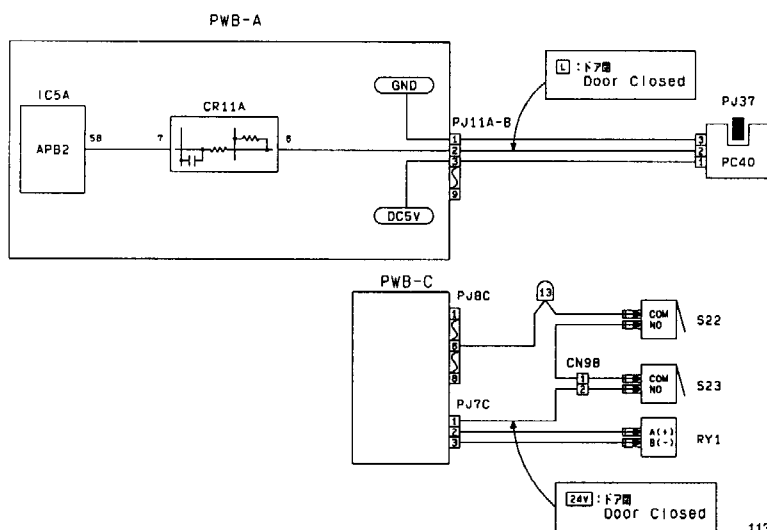
1136C22M

14-10. Detection of Right Upper Door in Position

- Right Upper Door Set Sensor PC40, fitted to the copier body, detects the Right Upper Door when closed. The Vertical Transport Rollers (driven-end) and Multi Bypass Table are mounted to the Right Upper Door.
- Right Upper Door Interlock Switch S22 is also installed just as with the Front Door.
- When the Right Upper Door is closed, the ribs on the door activate/actuate PC40/S22.



1136M049AA

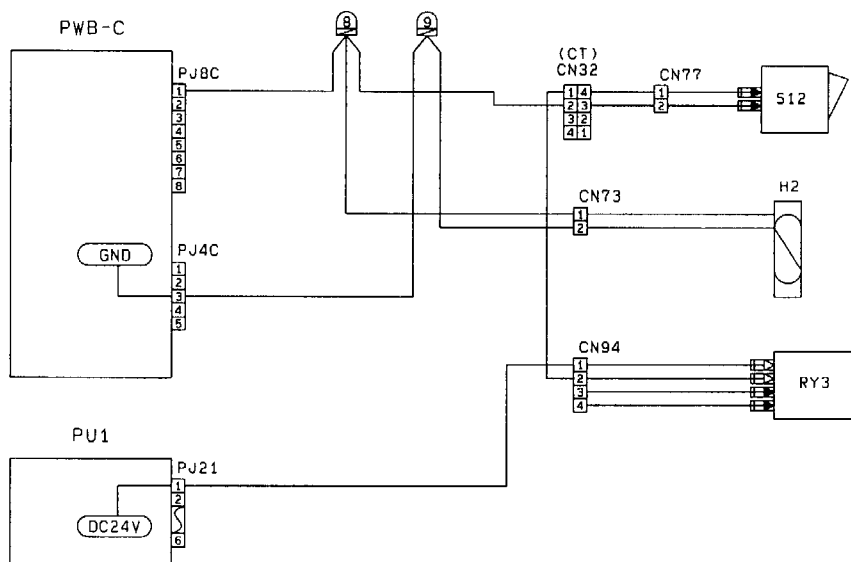
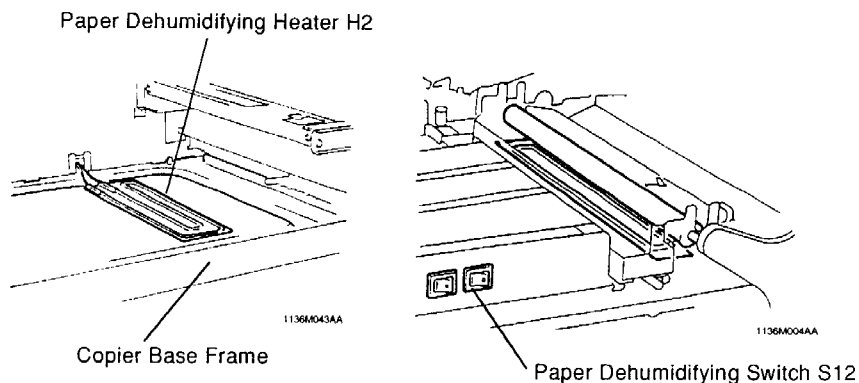


14-11. Paper Dehumidifying Heater

Paper Dehumidifying Heater H2 is mounted on the copier base frame under the 2nd Drawer. It prevents the paper in the drawer from growing damp in highly humid weather.

It works when the following conditions are met:

- * The power cord is plugged in the power outlet.
- * Power Switch S1 is in the OFF position.
- * Paper Dehumidifying Switch S12 is in the ON position.

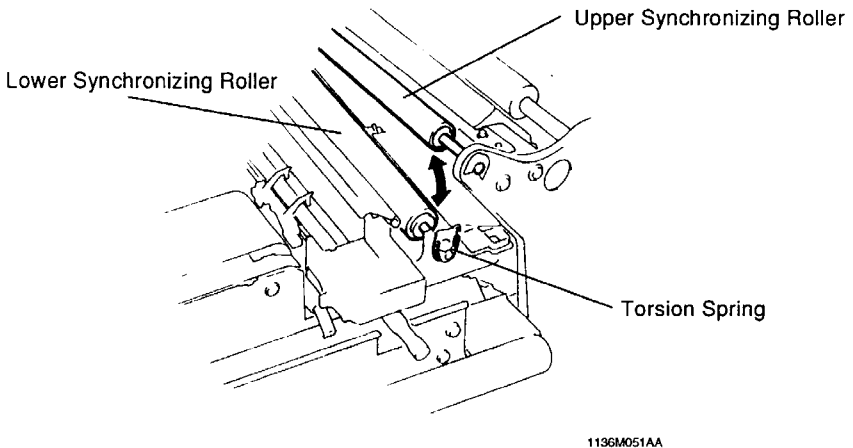
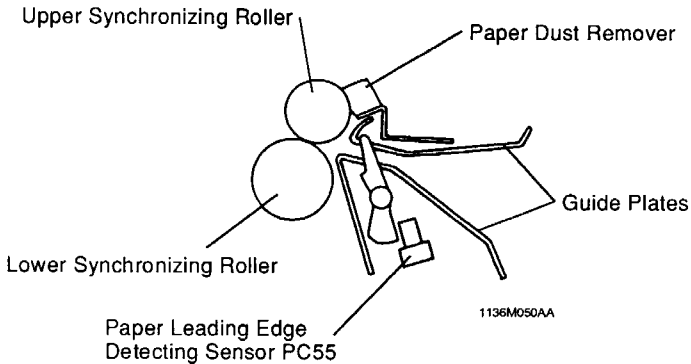


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15 SYNCHRONIZING ROLLERS

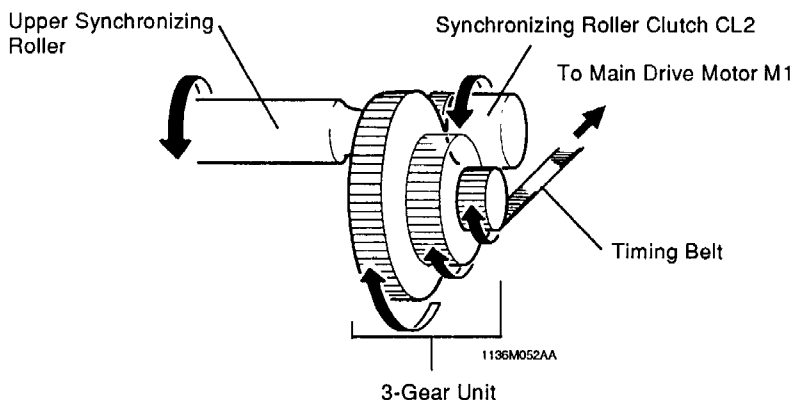
15-1. Construction

- The Upper Synchronizing Roller is a metal roller covered with a polyvinyl chloride tubing. It is secured to the front and rear frames of the copier.
- The Lower Synchronizing Roller, a rubber roller, is fitted to the Transport Assy. Pivoting about its rear end, the Lower Roller can be swung downward to facilitate clearing of paper misfeeds.
- The following illustration shows how the rollers are laid out.



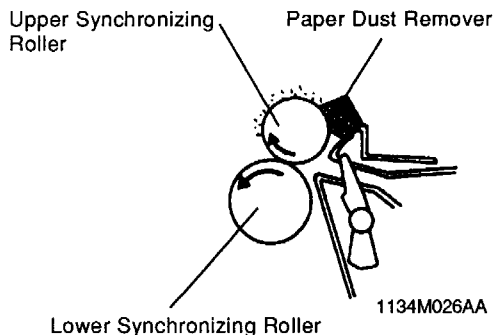
15-2. Synchronizing Roller Drive Mechanism

- The Upper Synchronizing Roller receives drive from Main Drive Motor M1 via a gear train and timing belt. The Upper Roller drives the lower one.
- The Synchronizing Rollers are started as Synchronizing Roller Clutch CL2 is energized.



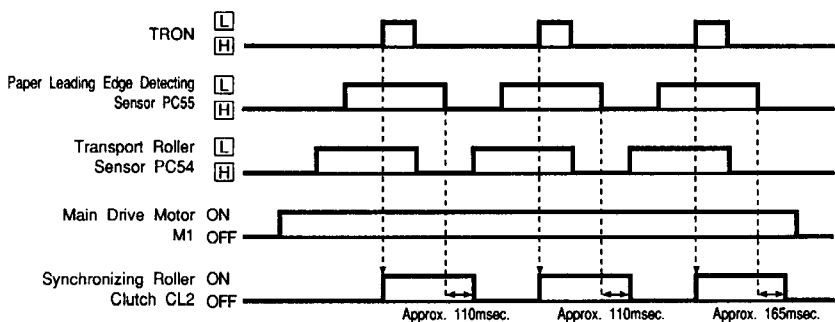
15-3. Paper Dust Remover

- The Paper Dust Remover is installed so that it makes contact with the Upper Synchronizing Roller.
- Since the Upper Synchronizing Roller is covered with a vinyl tubing, triboelectric charging occurs as the Roller turns in contact with the Paper Dust Remover.
- As paper is fed between the Synchronizing Rollers, the charges on the tubing attract paper dust from the paper. The dust is then transferred onto the Paper Dust Remover.

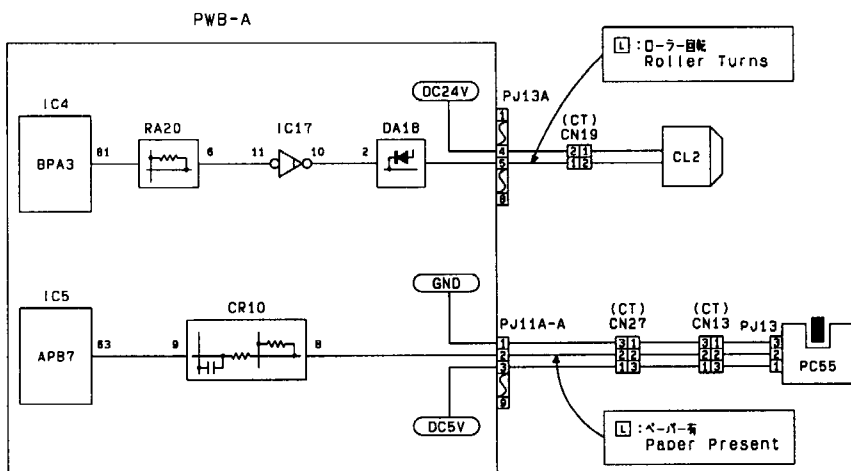


15-4. Synchronizing Roller Drive Control

- The Synchronizing Rollers are started as Synchronizing Roller Clutch CL2 is energized upon reception of a CL2 signal output from pin81 of IC4A on Master Board PWB-A.
- The start of the Rollers is synchronized with the Registration signal (TRON).
- * The TRON signal is output from SCP Board PWB-J at a given time after the Image Leading Edge signal (BASE) has been output.
- * The BASE signal is output when the Scanner reaches a given point in its scan motion.
- The Synchronizing Rollers are stopped at a given time after the paper has moved past Paper Leading Edge Detecting Sensor PC55.



1134T259MCB

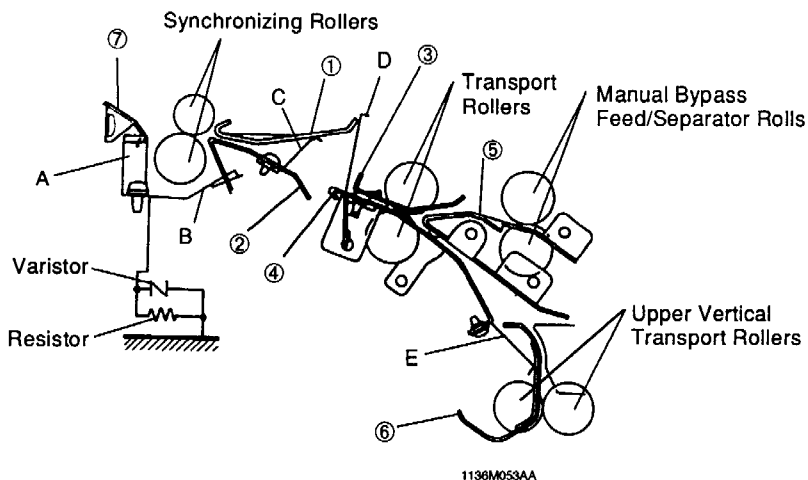


1136C26M

15-5. Prevention of Low Image Density on Copy

During conditions of high humidity when the paper is damp, charges would tend to flow from the Image Transfer Corona through the paper and guide plates to the ground. This results in low image density on the copies. To prevent this from occurring, a plastic spacer is installed between the copier frame and each guide plate around the Synchronizing Rollers so that it remains insulated. Instead of using the plastic spacer, an electrodeposition coating has been applied to some of those guide plates.

If, however, the resistance with the ground is made infinity, the guide plate would build up charges and a spark can occur with other guide plates, resulting in a malfunction. To prevent this, an 82-megohm resistor and a 1-kV varistor are connected to the guide plates. The guide plates are connected by flat springs as illustrated below.



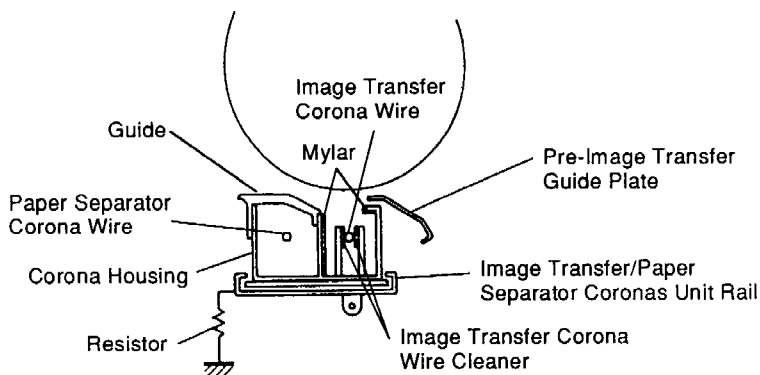
No.	Guide Plate Name	Insulation Method
①	Upper Pre-Synch Guide Plate	Plastic Spacer
②	Lower Pre-Synch Guide Plate	Plastic Spacer
③	Upper Transport Roller Guide Plate	None [Fitted to top of guide plate no. ④]
④	Lower Transport Roller Guide Plate	Plastic Spacer
⑤	Manual Bypass Guide Plate	Electrodeposition Coating
⑥	Vertical Transport Guide Plate	Plastic Spacer
⑦	Pre-Image Transfer Guide Plate	Fitted to plastic holder of Image Transfer/Paper Separator Coronas

Flat Spring	Connection
A	Between varistor-and-resistor and guide plate ⑦
B	Between varistor-and-resistor and guide plate ②
C	Between guide plates ② and ④
D	Between guide plates ② and ①
E	Between guide plates ④ and ⑤

16 IMAGE TRANSFER/PAPER SEPARATOR CORONAS

16-1. Construction and Functions of Image Transfer/Paper Separator Coronas Unit

<Construction>



1136M054AA

<Functions>

Image Transfer

The Image Transfer Corona applies a DC negative corona emission to the underside of the paper thereby attracting the positively charged toner onto the surface of the paper to form a visible, developed image of the original.

The Corona Unit is provided with a Corona Wire cleaning mechanism: the operator has only to pull out the lever on which the Cleaner is mounted from the front of the copier, which cleans the Wire.

The mylar strips affixed to the housing of the Image Transfer Corona minimize current that flows to the housing, thereby reducing the amount of ozone that is produced.

Paper Separation

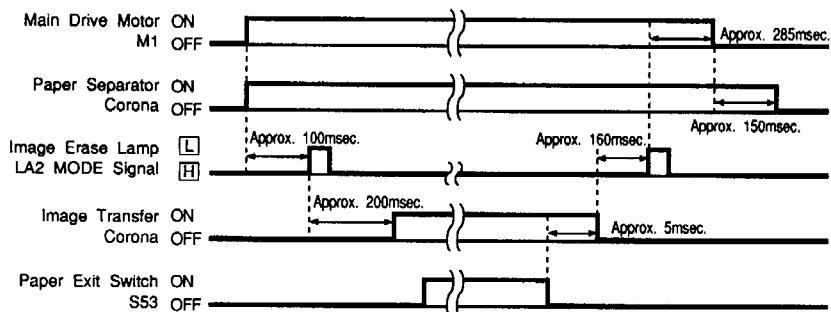
The Paper Separator Corona showers the underside of the paper with both positive and negative charges so that the paper can be easily separated from the PC Drum. In addition, two Paper Separator Fingers physically peel the paper off the surface of the PC Drum. (For details, see "PC Drum Paper Separator Fingers.")

Note: The Image Transfer/Paper Separator Coronas Unit is provided with a Pre-Image Transfer Guide Plate that determines the angle at which the paper comes into contact with the PC Drum and keeps an optimum distance between the paper and the PC Drum so that the image may be properly transferred onto the paper.

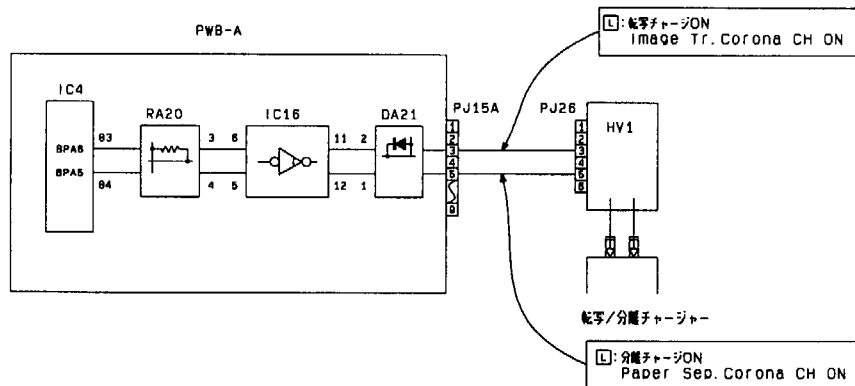
Note: The Image Transfer/Paper Separator Coronas Unit and Image Transfer/Paper Separator Coronas Unit Rail are insulated from the copier body. In addition, a 3.5-megohm resistor is connected to the unit rail. This improves the charge application efficiency from the Coronas Unit to the PC Drum and economizes on the output current from High Voltage Unit HV1.

16-2. Image Transfer/Paper Separator Coronas Control

- The Image Transfer/Paper Separator Coronas are turned ON and OFF by turning ON and OFF High Voltage Unit HV1. HV1 is turned ON and OFF by the Image Transfer/Paper Separator Corona ON signal output from pin83 (Image Transfer) or 84 (Paper Separator) of IC4A on Master Board PWB-A.



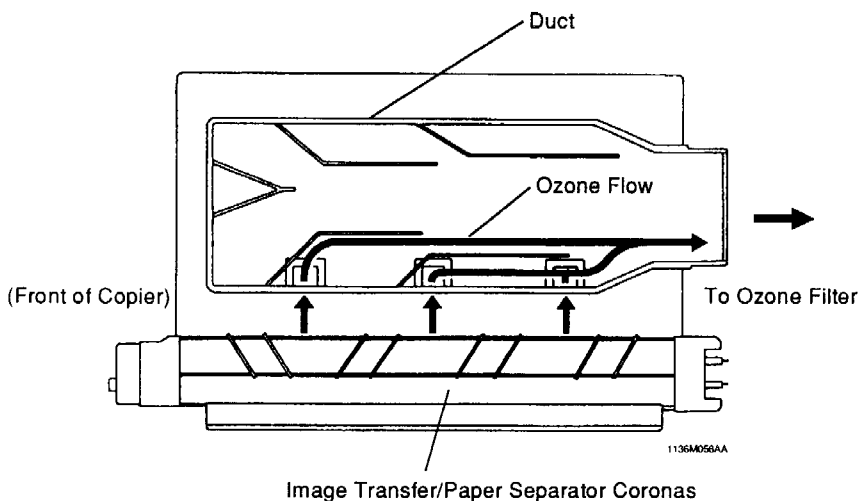
1134T260MCB



1136C27M

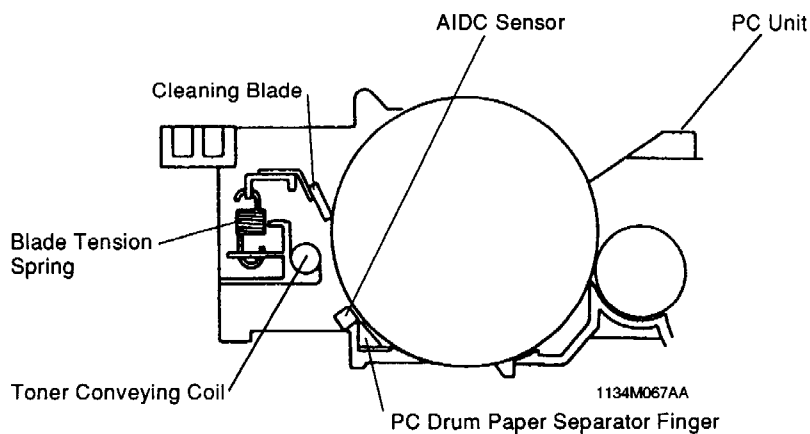
16-3. Ozone Filter

Ozone produced by the Image Transfer/Paper Separator Coronas is absorbed by the Ozone Filter on the back of the copier. It is absorbed from the air being drawn out of the copier through the Duct under the Suction Deck by Suction Fan Motor M4.

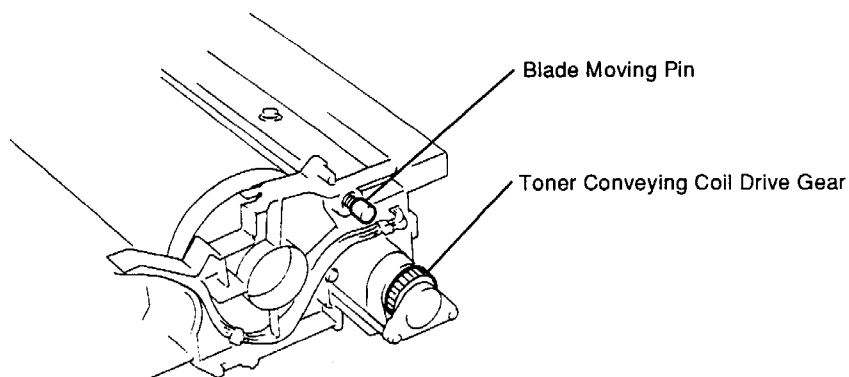


17 CLEANING UNIT

17-1. Construction



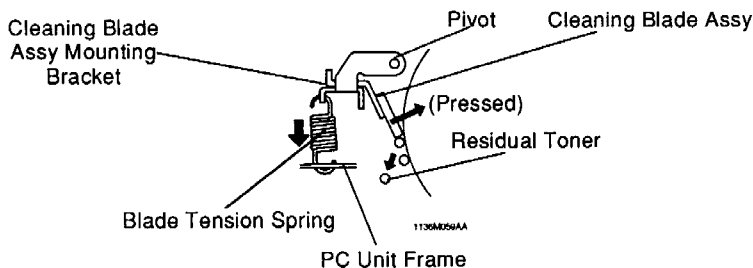
Back of PC Unit



17-2. Cleaning Blade

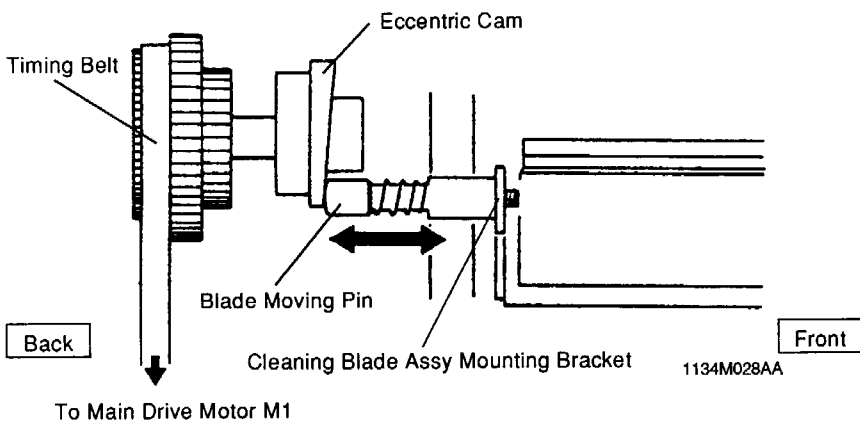
(1) Cleaning Blade Pressure Mechanism

The Cleaning Blade is pressed tightly against the surface of the PC Drum and scrapes off any toner remaining on the surface after image transfer. The Blade Tension Spring, hooked onto the Cleaning Blade Assy Mounting Bracket, gives an appropriate tension to the Cleaning Blade as it is held against the surface of the PC Drum.



(2) Cleaning Blade Moving Mechanism

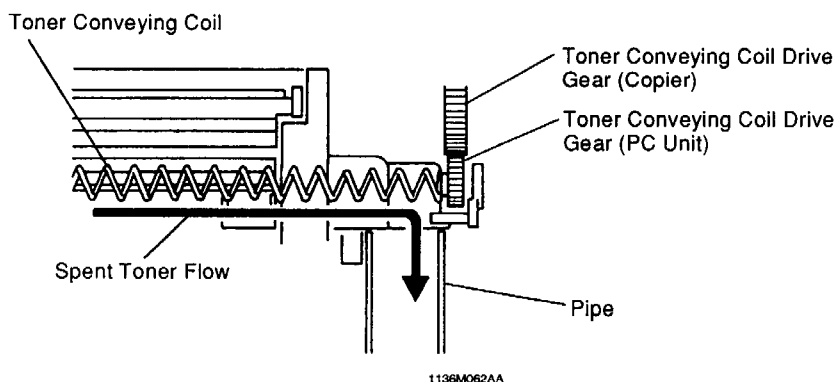
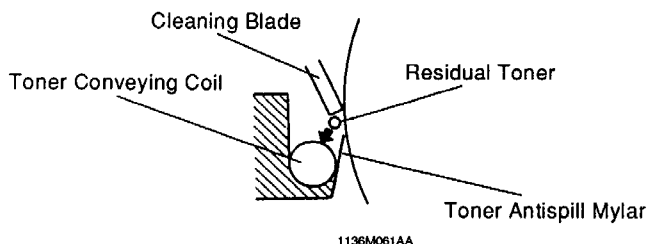
The Cleaning Blade is moved to the front and rear while the PC Drum is turning. This is done to ensure that all residual toner is scraped cleanly off the surface of the PC Drum and prevent the Blade edge from deteriorating. The eccentric cam fitted to a shaft of the copier is turned, which pushes the Blade Moving Pin on the Cleaning Blade Assy Mounting Bracket. This results in the Cleaning Blade being moved to the front and rear.



17-3. Spent Toner Collection

(1) Toner Conveying/Collecting Mechanism

- The toner which has been scraped off the surface of the PC Drum by the Cleaning Blade is conveyed by the Toner Conveying Coil towards the rear of the copier and falls into the Toner Collecting Box at the back of the copier through the pipe.
- The Toner Antispill Mylar is affixed under the Cleaning Blade to receive toner, thus preventing any toner from falling down onto the surface of the copy paper or the paper path.



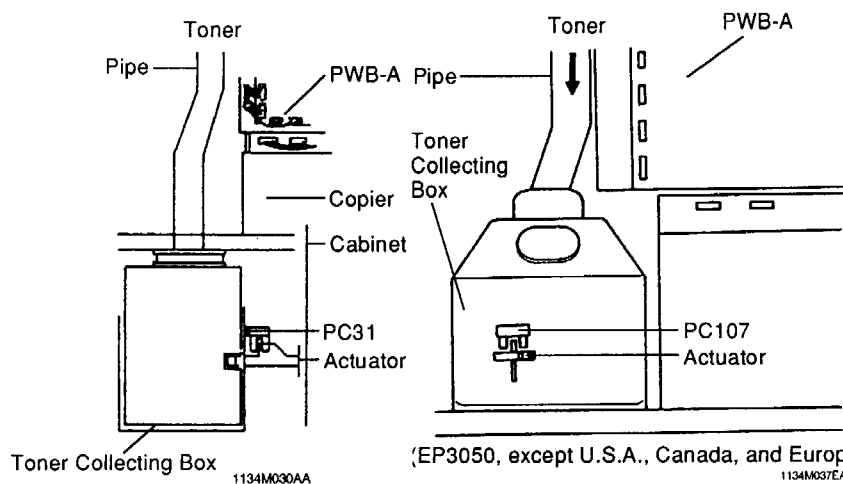
- The type of Toner Collecting Box and the method of detection of a box installed in position differ between the applicable marketing areas. See the following table.

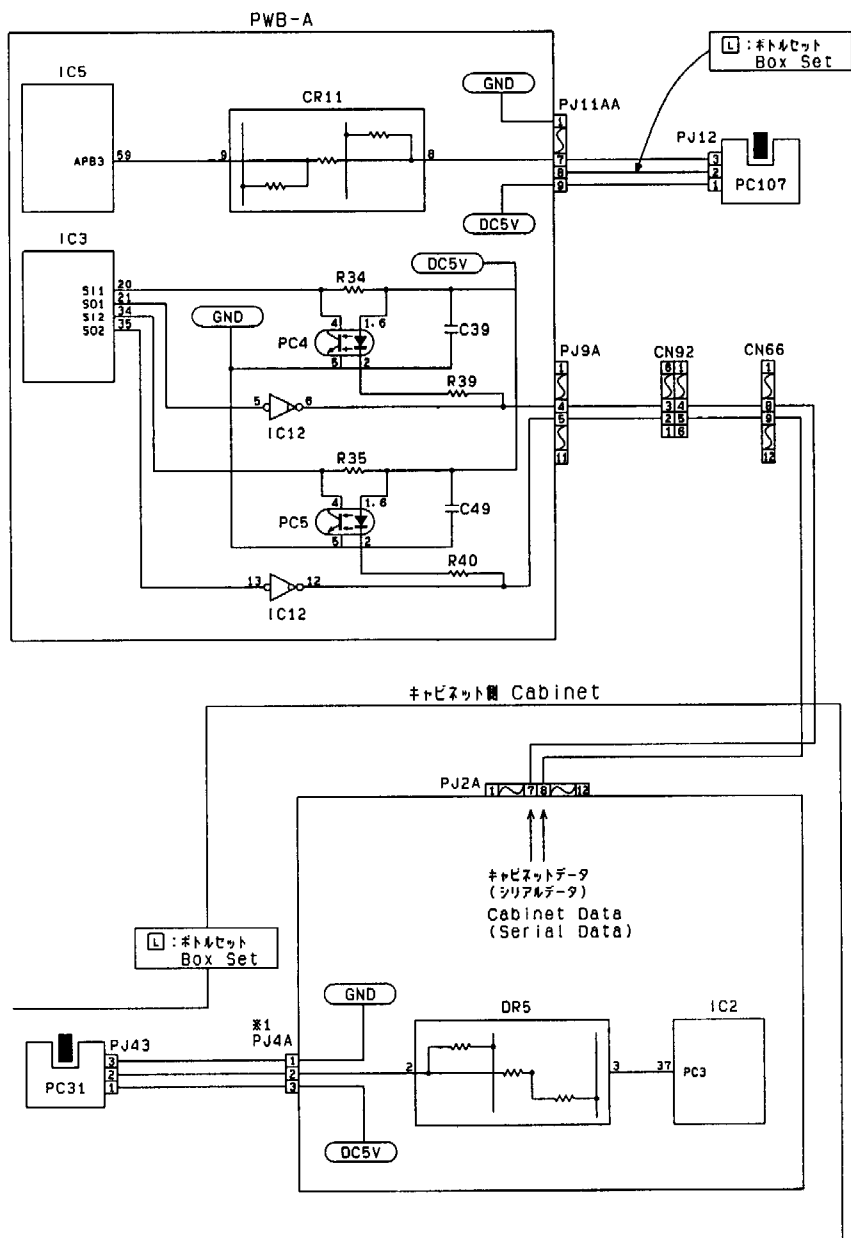
	Areas	Type of Box	Box-in-Position Detection
EP4050	All areas	Large-Capacity Toner Collecting Box (in Cabinet)	PC31 (in Cabinet)
EP3050	U.S.A., Canada, and Europe	Large-Capacity Toner Collecting Box (in Cabinet)	PC31 (in Cabinet)
	Other areas	Standard Toner Collecting Box (in copier)	PC107 (in Copier)

(2) Detection of Toner Collecting Box in Position

- When the Toner Collecting Box (Standard or Large Capacity) is installed in position, the box pushes the actuator, blocking the Toner Collecting Box Set Sensor (PC31 or PC107) (LOW).
- If no box is installed, the sensor is unblocked (HIGH), giving a warning message on the Touch Panel and inhibiting the initiation of a new copy cycle.
- The copier determines the condition as follows depending on the position of DIP Switch S1-2 on PWB-A and the state of the sensor (PC31 or PC107).

S1-2	PC107	PC31	Copier:
OFF	ON	ON	Regards that the standard Toner Collecting Box is placed in position.
	ON	OFF	Regards that the standard Toner Collecting Box is placed in position.
	OFF	ON	Inhibits copying (Toner Collecting Box not yet in place).
	OFF	OFF	Inhibits copying (Toner Collecting Box not yet in place).
ON	ON	ON	Inhibits copying (Toner Collecting Box not yet in place).
	ON	OFF	Inhibits copying (Toner Collecting Box not yet in place).
	OFF	ON	Regards that the Large Capacity Toner Collecting Box is placed in position.
	OFF	OFF	Inhibits copying (Toner Collecting Box not yet in place).





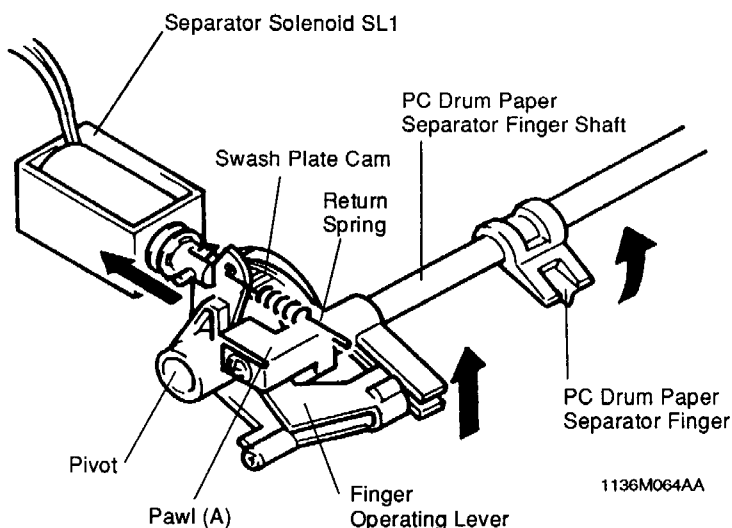
1136C28MCA

17-4. PC Drum Paper Separator Fingers Moving Mechanism/Control

<Paper Separator Finger Swinging Mechanism>

- After image transfer, an AC corona emission is applied to the underside of the paper by the Paper Separator Corona to neutralize the paper so that it can be easily separated from the PC Drum. To further ensure that the paper is positively separated from the PC Drum, there are two Paper Separator Fingers installed. They physically peel the paper off the surface of the PC Drum. (For details of AC corona emission, see "16. MAGE TRANSFER/PAPER SEPARATOR CORONAS.")

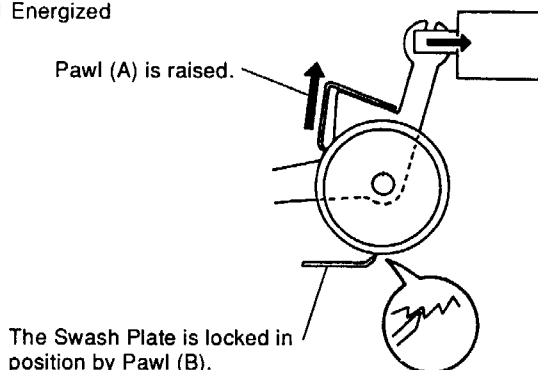
The Paper Separator Fingers are swung up and down by Separator Solenoid SL1.



<Paper Separator Finger Front-to-Back Moving Mechanism>

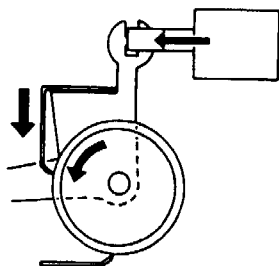
- To prevent the Paper Separator Fingers from damaging the surface of the PC Drum, they are moved over a given distance to the front and rear so that they will contact wider areas of the surface of the PC Drum, thus preventing localized damage of the PC Drum surface.
- The Swash Cam mounted on the Pivot Pin of the Finger Operating Lever is moved through steps by means of the Ratchet and SL1, causing the Swash Cam to push the Finger Shaft.
- The lateral movement of the Paper Separator Fingers is 3.5 mm (which is equivalent to 60 times energization and deenergization operations of SL1).

SL1 Energized



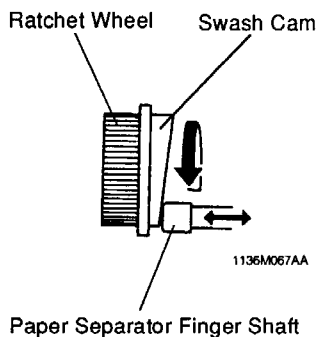
1136M065AA

SL1 Deenergized



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Pawl (A) pushes the Swash Cam downward to turn it one notch.

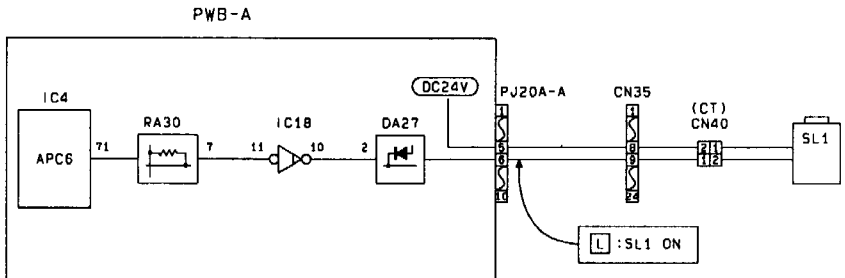
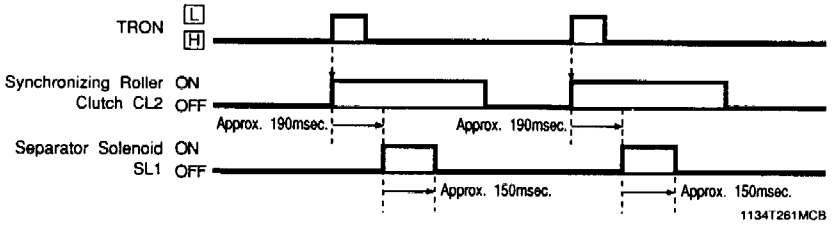


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<PC Drum Paper Separator Finger Control>

- The PC Drum Paper Separator Fingers are moved by energizing and deenergizing Separator Solenoid SL1 as commanded by a Finger ON signal output from pin71 of IC4A on Master Board PWB-A.

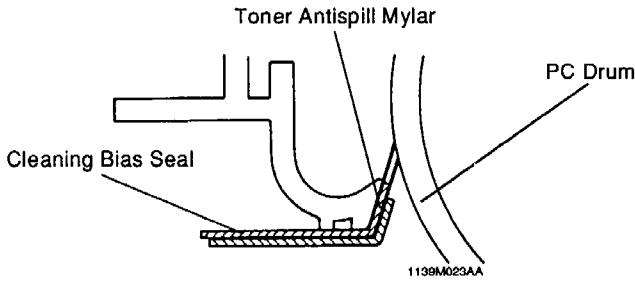
(Multi-copy cycle for 2 copies)



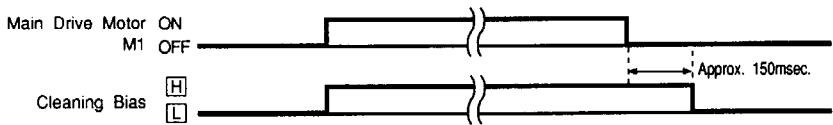
1136C29M

17-5. Cleaning Bias (Option)

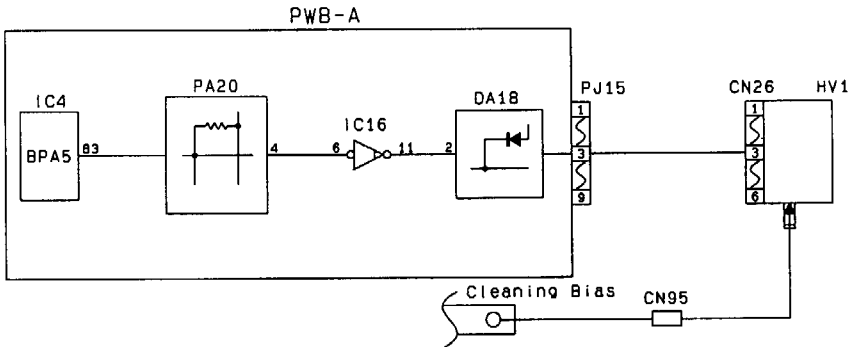
- A Cleaning Bias Seal can be installed optionally. It minimizes damage to the PC Drum from acid paper.



- The Cleaning Bias is controlled by turning ON and OFF High Voltage Unit HV1.
- HV1 is turned ON and OFF by the Cleaning Bias signal output from pin83 of IC4A on Master Board PWB-A.



1134T262MCA

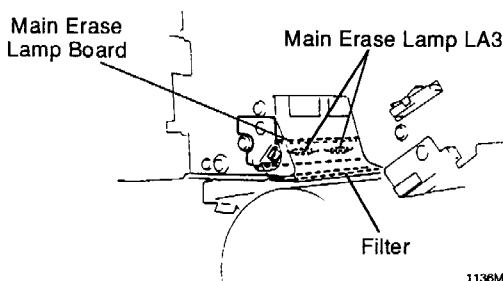


1136C30M

18 MAIN ERASE LAMP

18-1. Construction

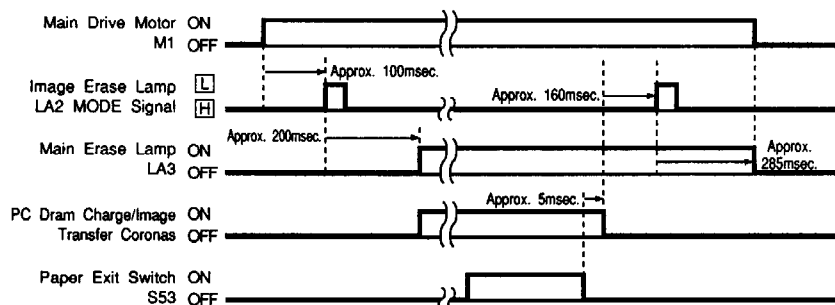
- Main Erase Lamp LA3 consists of ten tungsten-filament lamps mounted side-by-side on a board. A filter is installed between LA3 and the PC Drum to protect LA3 from contamination.
- LA3 projects light onto the surface of the PC Drum to neutralize any surface potential remaining after image transfer.



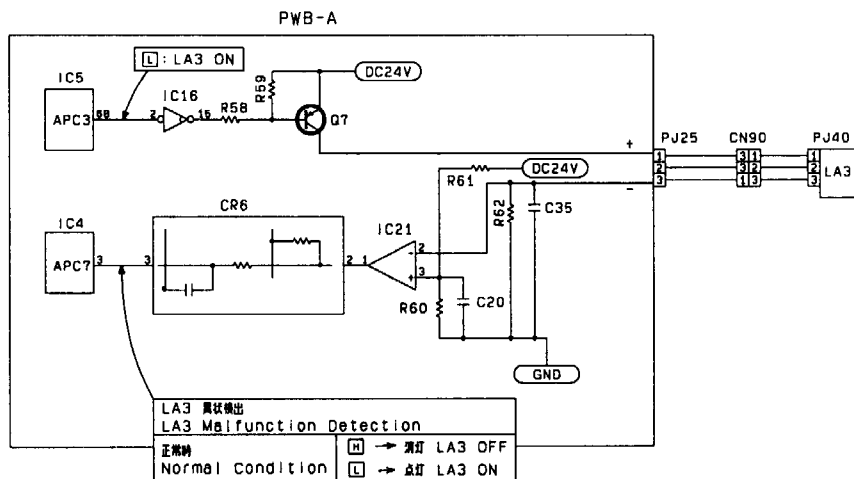
1136M069AA

18-2. Main Erase Lamp LA3 ON/OFF Control

- LA3 is turned ON and OFF by the LA3 ON signal output from pin68 of IC5A on Master Board PWB-A.
- A faulty LA3 is detected by the signal input to pin3 of IC4A on PWB-A.
- The ON/OFF timing of LA3 is as follows.



1134T263MCB

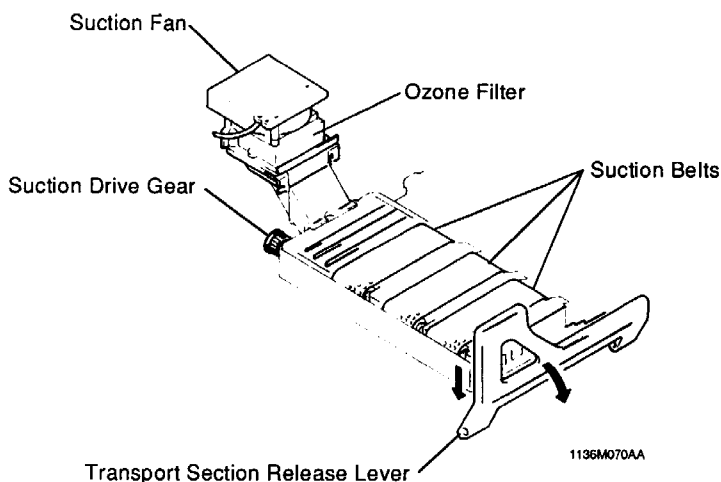


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19 PAPER TRANSPORT

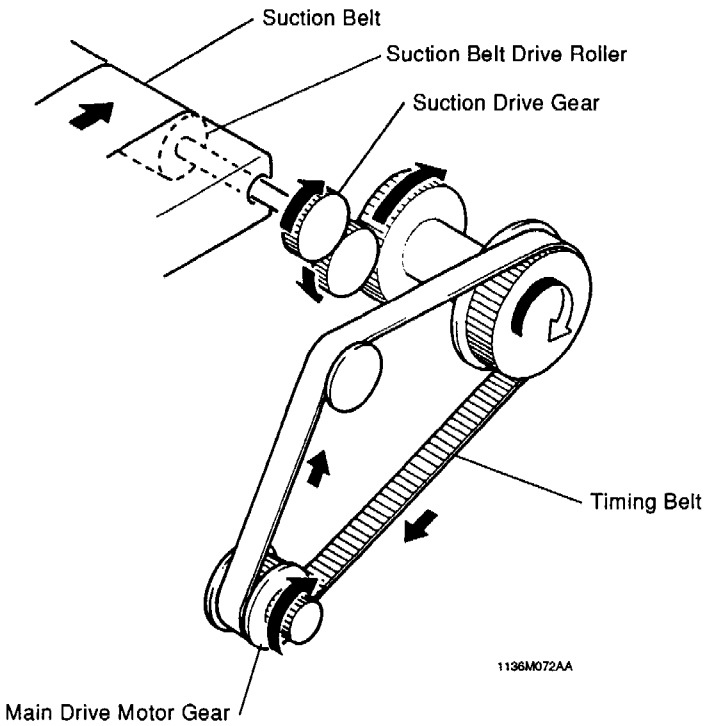
19-1. Construction

- The Transport Section consists of the following parts.
Pulling the Transport Section Release Lever down swings the Transport Section down, pivoting at the rear of the copier. This facilitates clearing of misfeeds.
- Suction Fan Motor M4 draws the paper onto the turning Suction Belts. It also pulls the paper down as it reaches the Pre-Fusing Guide Plate to ensure that the paper is smoothly fed into the Fusing Unit.
- As M4 turns, ozone produced by the Image Transfer/Paper Separator Coronas is absorbed by the Ozone Filter from the air being drawn out of the copier.



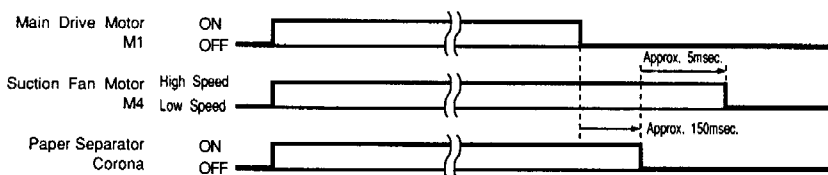
19-2. Suction Belt Drive Mechanism

The Suction Belts are driven by Main Drive Motor M1 through a timing belt and gear train.

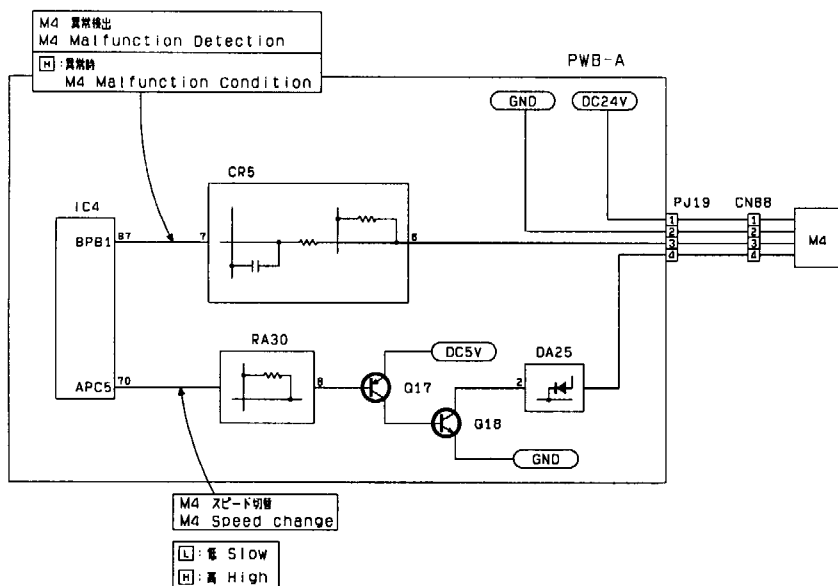


19-3. Suction Fan Motor M4 Drive Control

- The speed of Suction Fan Motor M4 is switched between full and half speed by the M4 ON signal output from pin 70 of IC4A on Master Board PWB-A.
- A faulty M4 is detected by the Lock signal input to pin 87 of IC4A on PWB-A.
- M4 is energized at the following timing.



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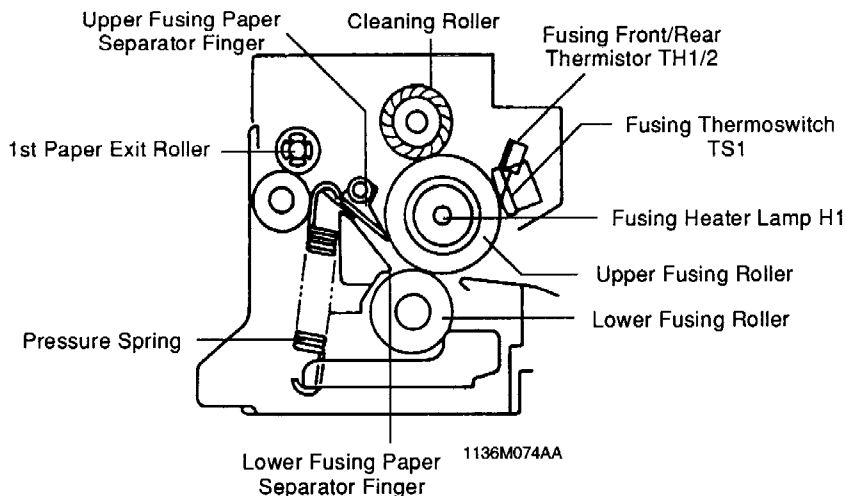


1136C32M

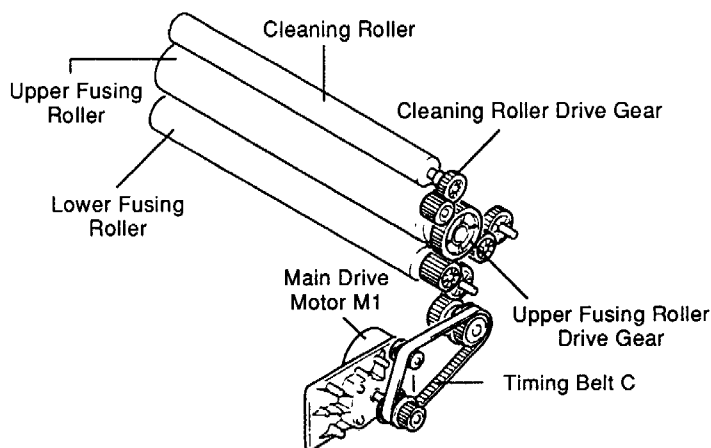
20 FUSING UNIT

20-1. Construction and Drive Train

- The Upper Fusing Roller and Lower Fusing Roller together apply heat and pressure to the toner and paper to permanently fix the developed image to the paper. The Cleaning Roller is installed for the cleaning of the Fusing Rollers.



- Drive for the Upper Fusing Roller and Cleaning Roller is transmitted from Main Drive Motor M1 to the Upper Fusing Roller Drive Gear and Cleaning Roller Drive Gear via Timing Belt C and a gear train. The Lower Fusing Roller is driven by the Upper Fusing Roller in contact with it.



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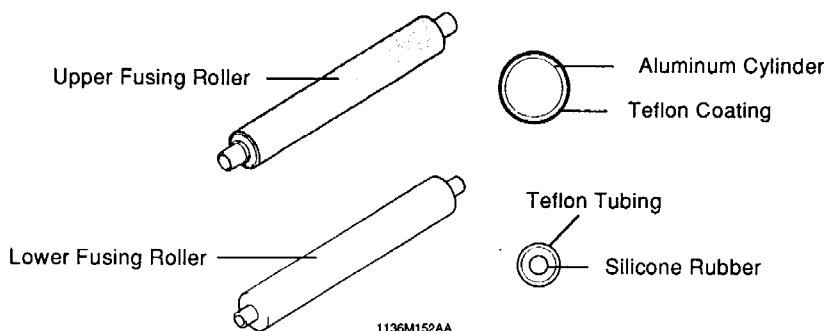
20-2. Fusing Rollers

<Upper Fusing Roller>

- Employed is a teflon-coated roller which features wear resistance and makes for improved fusing performance. It also repels the adherence of melted toner. Further, a conductive coating has been applied to the surface of the Upper Fusing Roller, thereby neutralizing any charges.

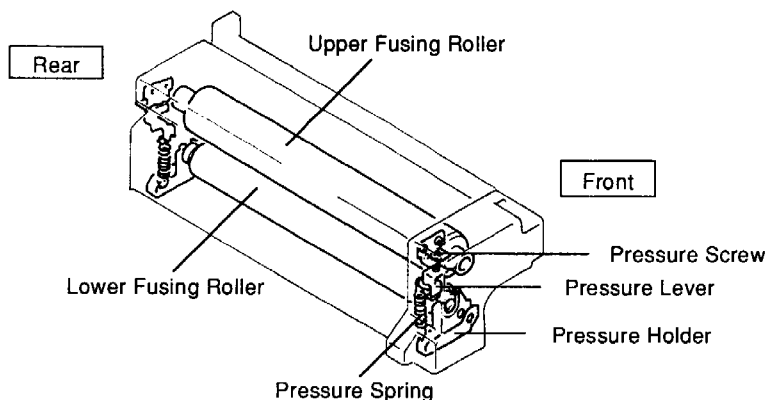
<Lower Fusing Roller>

- An elastic silicone rubber is used for the Lower Fusing Roller, offering a wider area of contact between the two Fusing Rollers. Since the roller is cleaned only indirectly, the silicone rubber is covered with a teflon tubing. This contributes to preventing smear on the Roller.



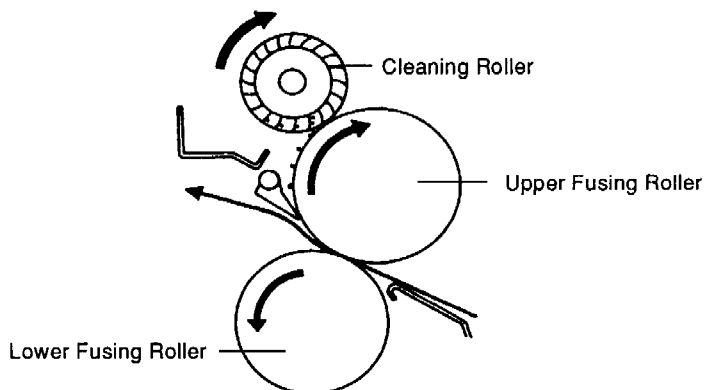
20-3. Fusing Rollers Pressure Mechanism

- To ensure that there is a certain width of area of contact between the Upper and Lower Fusing Rollers, the Pressure Springs are hooked onto the Pressure Holders at the front and rear ends of the Lower Fusing Roller.
- The other end of each of the Pressure Springs is hooked to the Pressure Lever, into which a Pressure Screw is installed. When the Pressure Screws are tightened, the Pressure Holders are raised. As a result, the Lower Fusing Roller is brought into tight contact with the Upper Fusing Roller.



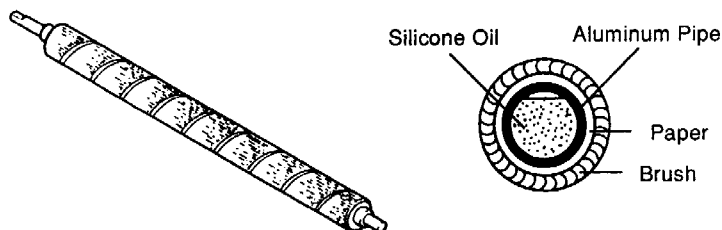
20-4. Fusing Roller Cleaning Mechanism

- The Cleaning Roller is held pressed against the Upper Fusing Roller to remove toner and paper dust from the Upper Fusing Roller.
- The Cleaning Roller turns in the direction opposite to the Upper Fusing Roller and toner and paper dust on the surface of the Upper Fusing Roller stick to the brush of the Cleaning Roller. It also supplies silicone oil to the surface of the Upper Fusing Roller, thereby helping the Roller repel the adherence of melted toner and preventing paper from being wound around it.



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- The Cleaning Roller is a hollow aluminum pipe into which silicone oil has been packed. The surface of the aluminum pipe has many holes. Paper is wrapped around this aluminum pipe to hold the silicone oil and is covered with an oil-impregnated brush.



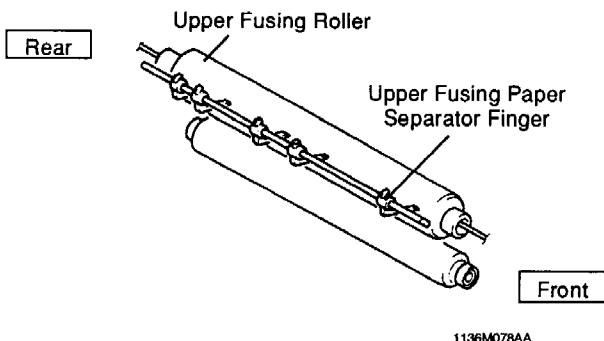
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20-5. Paper Separator Fingers

- Each of the two Fusing Rollers is provided with Paper Separator Fingers that strip the paper from the surface of the Rollers.

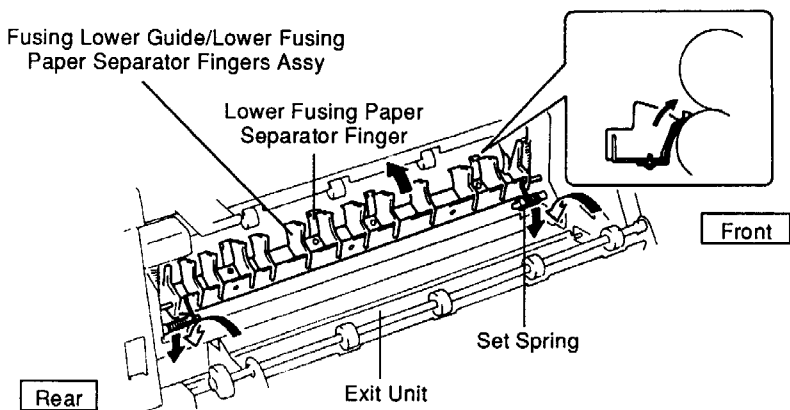
◆ Upper Fusing Paper Separator Fingers

- The Upper Fusing Paper Separator Fingers have been coated with teflon so that they will not be contaminated with toner.
- The tip of each Separator Finger is at all times pressed against the surface of the Upper Fusing Roller by a pressure spring. The fingers are laid out as illustrated below, as paper registration is to one side in this copier.



◆ Lower Fusing Paper Separator Fingers

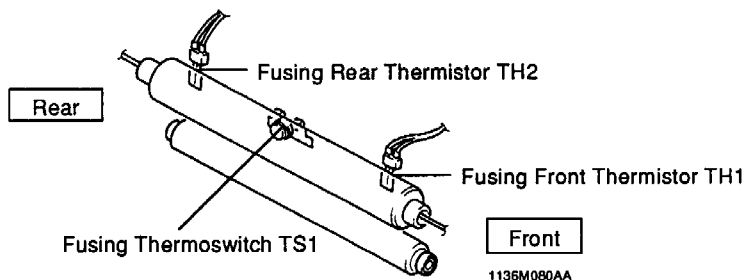
- The Lower Fusing Paper Separator Fingers are flat springs to enhance paper separating performance and ensure that the paper would not be wedged if a misfeed occurs.
- The Fusing Lower Guide/Lower Fusing Paper Separator Fingers Assy is moved down as the Exit Unit is swung down, facilitating clearing of misfeeds.



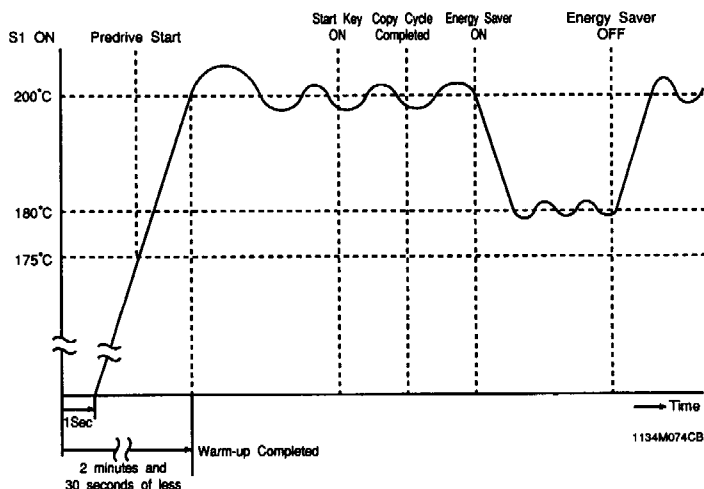
20-6. Fusing Temperature Control

<Overview>

- Fusing Front Thermistor TH1 and Fusing Rear Thermistor TH2 detect changes in the surface temperature of the Upper Fusing Roller at its front and rear ends. The Thermistors input the corresponding analog voltages to pins 78 (TH1) and 77 (TH2) of IC1A on Master Board PWB-A so that PWB-A can control the surface temperature of the Upper Fusing Roller.
- TH1 is usually used to provide 200°C temperature control.
- TH2 is provided to monitor the temperature at the rear that could rise when paper of a small size is fed through the copier.
- Both thermistors are located where paper of a small size does not move past.



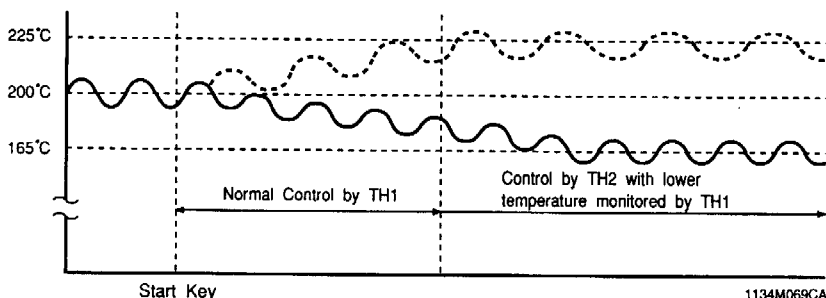
- To avoid a current surge when the copier is turned ON, Fusing Heater Lamp H1 is turned ON with a time lag of 1 second after S1 has been turned ON.
- To protect H1 from being repeatedly turned ON and OFF, it is kept ON or OFF for a period of 1 second.
- While the copier is warming up, the Fusing Rollers are turned so that the Lower Fusing Roller receives heat. This ensures good fusing performance immediately after the warm-up.



<Temperature Control When Small Size Paper is Fed Through>

- TH2 detects the surface temperature of the rear end of the Upper Fusing Roller. When detecting a temperature of 225°C or more, TH2 comes into play to provide the temperature control.
- If TH1 detects a temperature of 165°C or less, then TH1 is used, instead of TH2, to provide the temperature control.
- H1 is turned ON and OFF under different temperatures detected by TH1 and TH2 as detailed below.

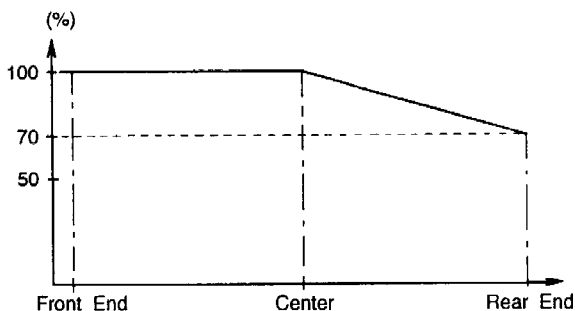
Temperature Detected by TH1	Temperature Detected by TH2	H1 ON/OFF
Less than 200°C	Less than 225°C	ON
200°C or more	Less than 225°C	OFF
165°C or more	225°C or more	OFF
Less than 165°C	225°C or more	Turned OFF if currently ON Turned ON if currently OFF



- The Table below shows the relationship between the analog voltage applied to pins 77 and 78 (AN3 and 4) of IC1A on PWB-A and the Upper Fusing Roller surface temperature.

Temperature °C	Input Voltage to IC1A-77, 78	Temperature °C	Input Voltage to IC1A-77, 78	Temperature °C	Input Voltage to IC1A-77, 78
100	Approx. 3.21	150	Approx. 1.60	200	Approx. 0.65
110	Approx. 2.87	160	Approx. 1.35	210	Approx. 0.54
120	Approx. 2.53	170	Approx. 1.13	220	Approx. 0.46
130	Approx. 2.20	180	Approx. 0.94	225	Approx. 0.42
140	Approx. 1.89	190	Approx. 0.78		

- H1 has the following light distribution characteristic. That is, the intensity at the rear of the Lamp is lower than the front end by about 30% to prevent the temperature of the rear end of the Upper Fusing Roller from increasing.



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<Predrive>

- Predrive is performed at the following timing.

TH1 detects the surface temperature of the Upper Fusing Roller immediately before H1 is turned ON.

If temperature is less than 165°C

If temperature is 165°C or more

Predrive begins when the temperature detected by TH1 reaches 175°C, provided that the Predrive Inhibit signal is LOW.

Predrive is completed in 30 seconds and the copier becomes ready to make copies when the temperature detected by TH1 reaches 200°C.

Predrive is completed in 15 seconds and the copier becomes ready to make copies when the temperature detected by TH1 reaches 200°C.

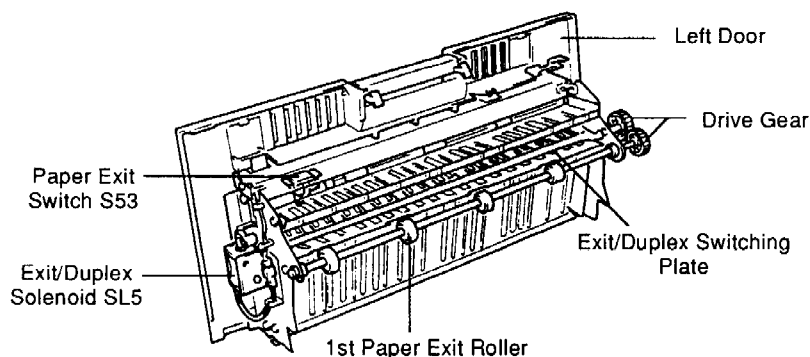
<Detection of Abnormally High Temperature>

- H1 is turned ON and OFF by the signal output from pin 16 (P51) of IC1A on PWB-A. It is turned ON by a LOW signal and OFF by a HIGH signal.
- When TH1 detects an abnormally high temperature, the output from pin 7 of IC20A on PWB-A goes from LOW to HIGH. The Self Holding signal goes LOW causing RY1C to turn OFF. This causes RY1 to turn OFF, which cuts off power to H1, turning it OFF.



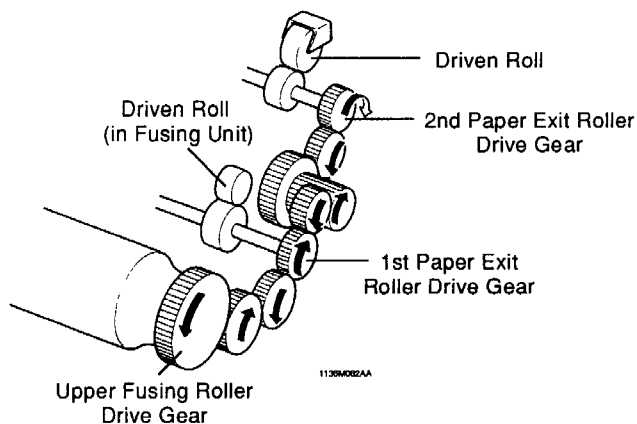
21 EXIT UNIT

21-1. Construction



21-2. Exit Unit Drive Mechanism

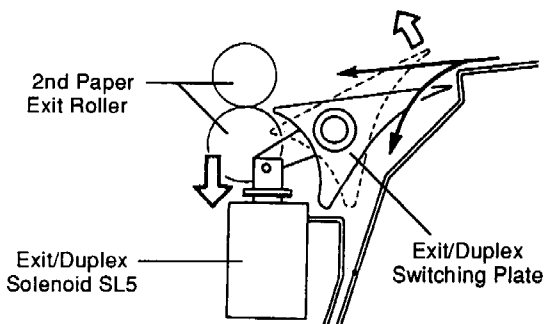
Drive for the Exit Unit comes from the Fusing Unit by way of a gear train, turning the 1st and 2nd Paper Exit Rollers.



21-3. Exit/Duplex Switching Mechanism/Control

<Switching Mechanism>

- The Exit/Duplex Switching Plate in the Exit Unit is operated to feed the paper into Duplex Unit AD-5 when the copier is in the 2-sided copying mode.

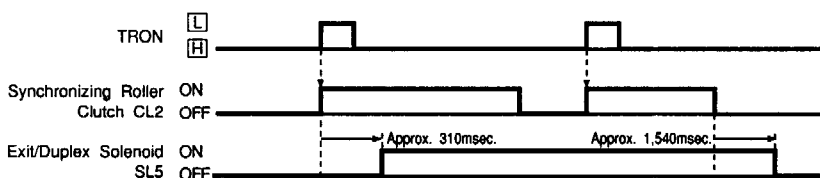


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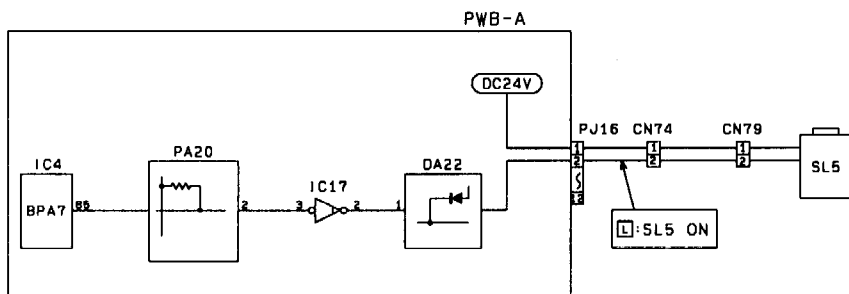
<Switching Control>

- The Exit/Duplex Switching Plate is swung up and down when SL5 is energized and deenergized by the signal output from pin85 of IC4A on Master Board PWB-A.
- The plate is operated at the following timing.

(Multi-copy cycle for 2 copies)



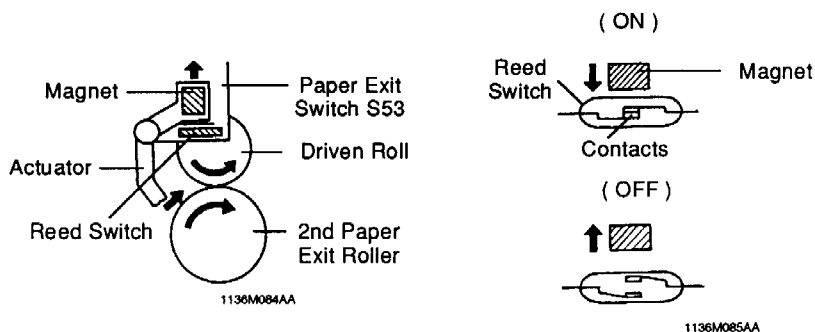
1134T258MCB



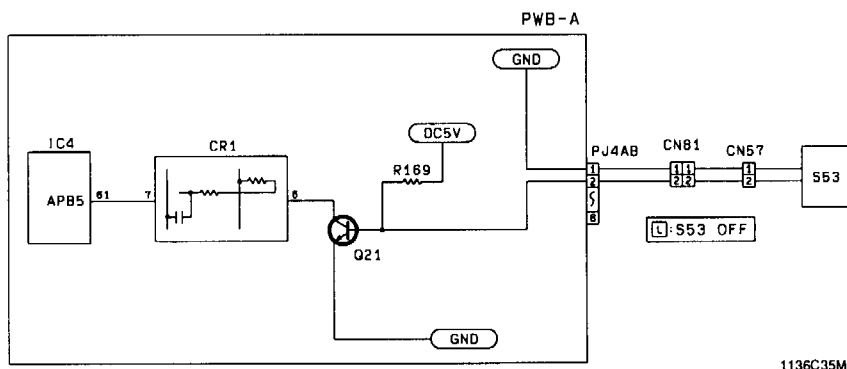
1136C34M

21-4. Paper Exit Detection

- Paper Exit Switch S53 detects a sheet of paper that is being fed out of the copier. Instead of a photosensor, a reed switch is used for S53 for its heat-resistance. The switch must be located near the Fusing Unit which gets hot. When the paper moves the S53 actuator, the magnet fitted to the actuator is pulled away from the reed switch and the switch contacts open. This means that S53 is turned OFF.

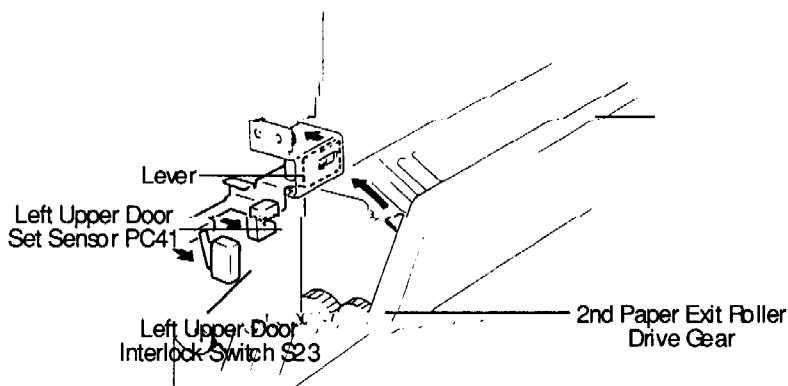


- The S53 detection result is sent to Master Board PWB-A and the copier knows that a sheet of paper has been fed out of the copier.

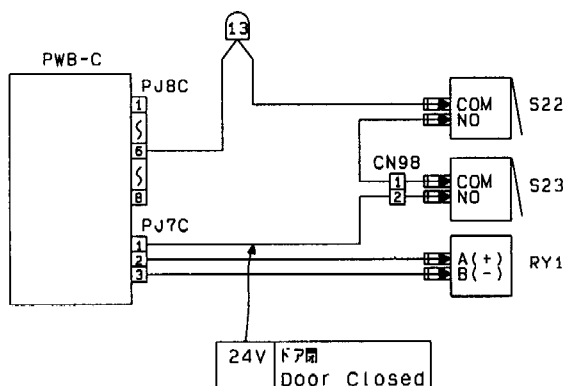
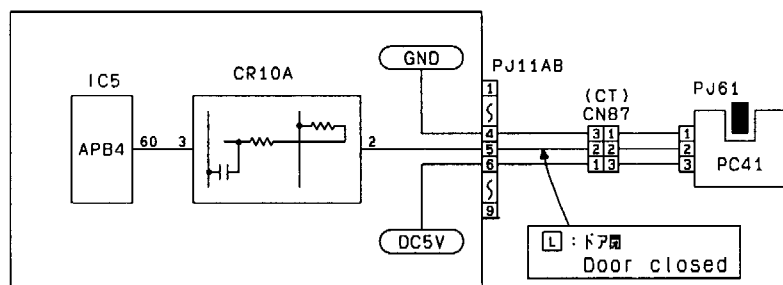


21-5. Detection of Left Upper Door in Position

- Left Upper Door Set Sensor PC41, fitted to the copier body, detects the Left Upper Door when closed. The Exit Unit is fitted to the Left Upper Door.
- Left Upper Door Interlock Switch S23 is also installed just as with the Front Door.
- When the Left Upper Door is closed, the rib on the Exit Unit pushes the Lever, which activates/actuates PC41/S23.



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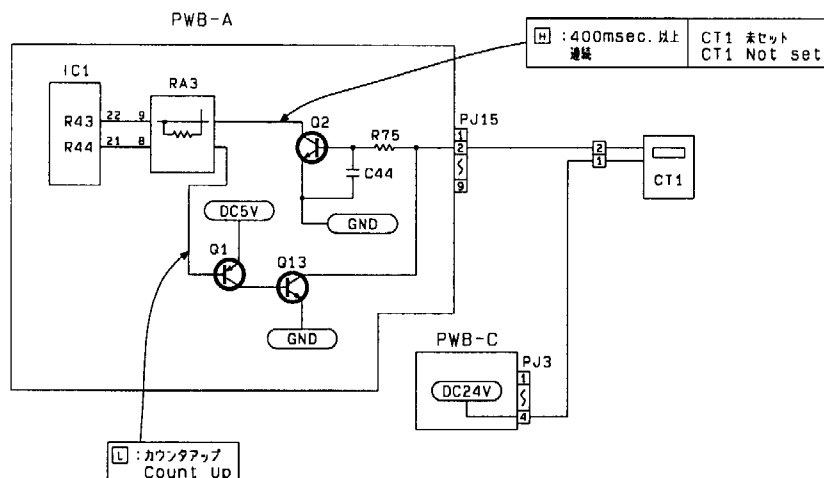
22 TOTAL COUNTER

22-1. Detection of Total Counter in Position

- This copier is designed to detect whether a Total Counter (CT1) is securely connected. It ensures that the copier can keep track of its usage by eliminating the possibility of a copy cycle being run without the Total Counter. As shown in the circuit diagram below, the copier inhibits the initiation of a new copy cycle if it continuously detects a Total Counter disconnected for a 400-msec. period. At this time, the copier keeps the Start Key blinking orange, warning the operator that the Total Counter is not correctly connected.

22-2. CT1 Count-Up

- The signal from IC1A on Master Board PWB-A turns ON Transistors Q1A and Q13A under the following conditions, which results in CT1 counting up. See the circuit diagram below.
 - The trailing edge of the copy moves past Paper Exit Switch S53.
 - The trailing edge of the copy moves past the Sorter Exit Sensor of the Sorter if the copier is equipped with a Sorter.
 - When a copy is to be stored in the Duplex Unit in a 2-sided copying mode, the trailing edge of the copy moves past the Duplex Paper Entry Sensor of the Duplex Unit.

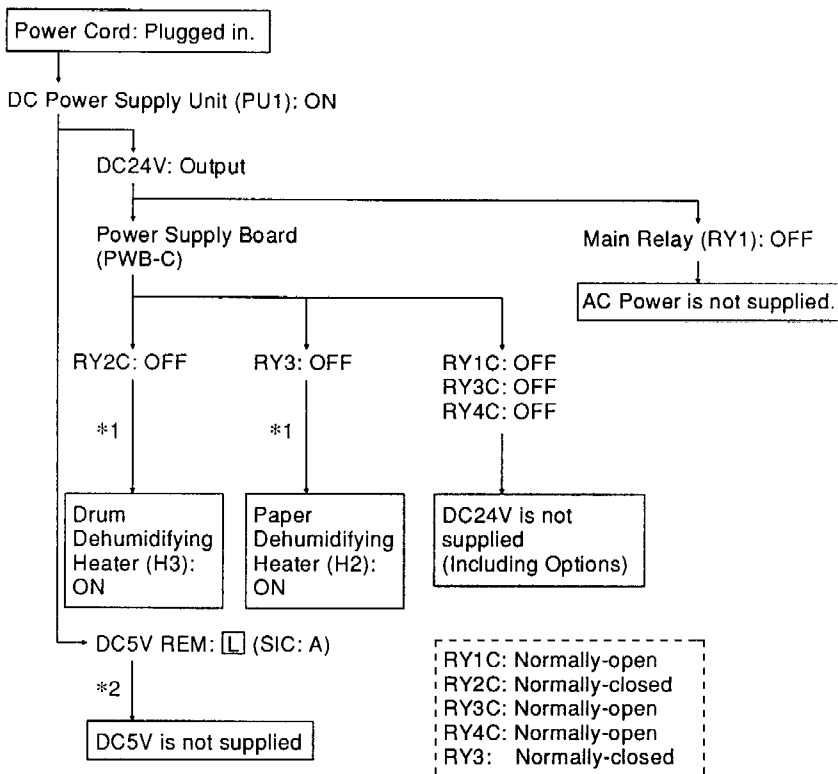


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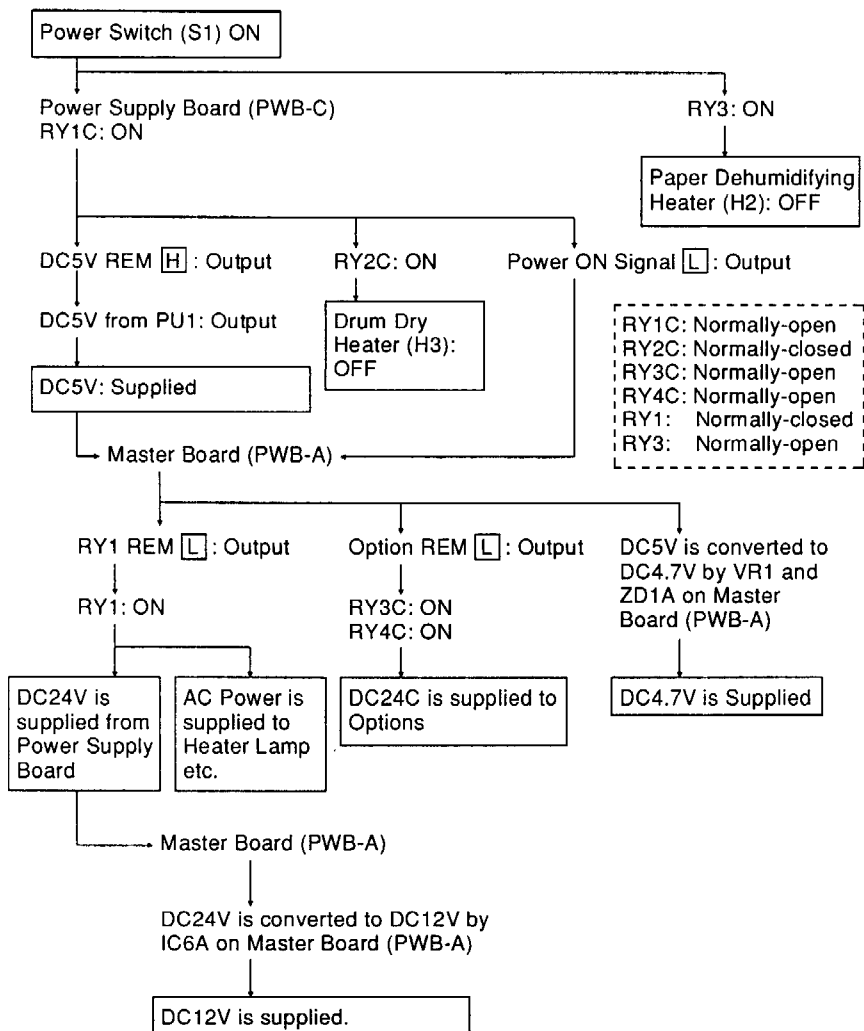
23 POWER SUPPLY

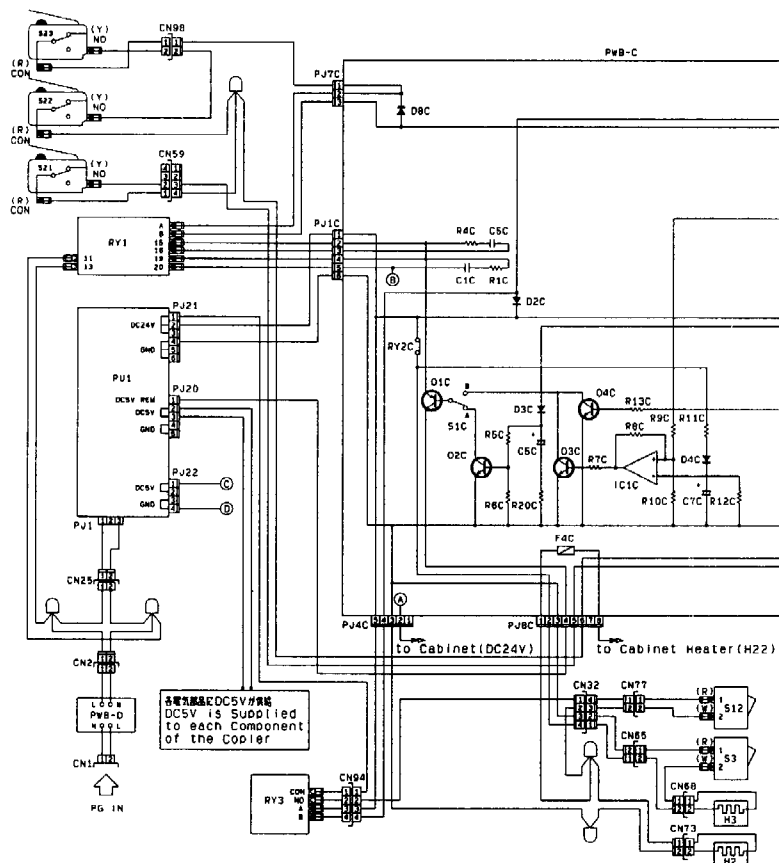
The copier power is supplied as follows when the power cord is plugged in or Power Switch S1 turned ON.

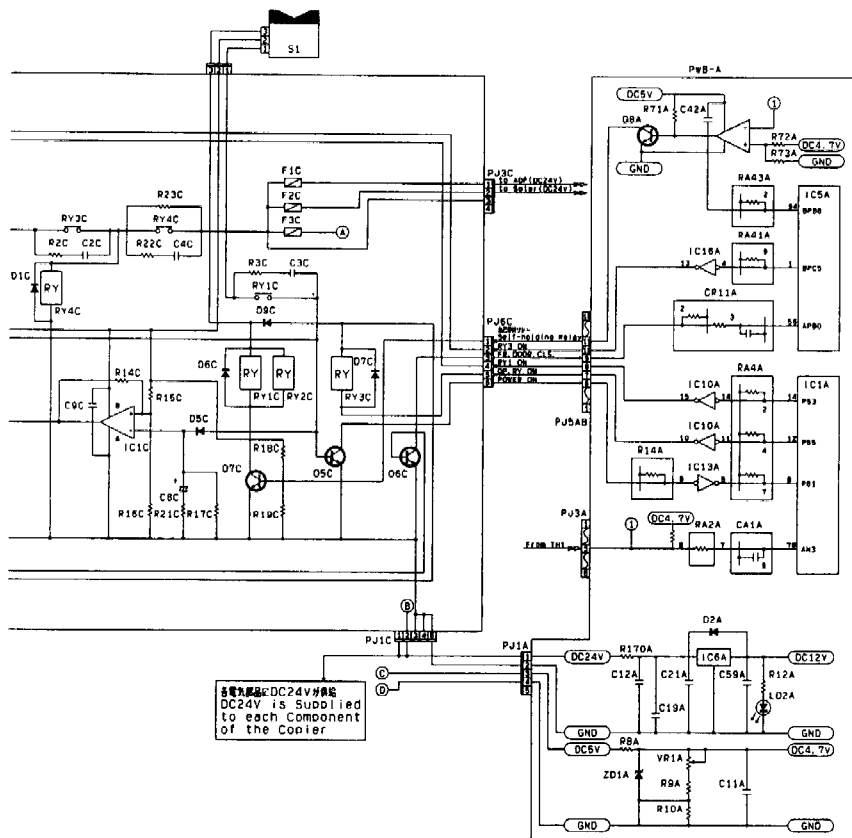
1. When Power Cord is Plugged in.



2. Power Switch (S1) is turned ON.







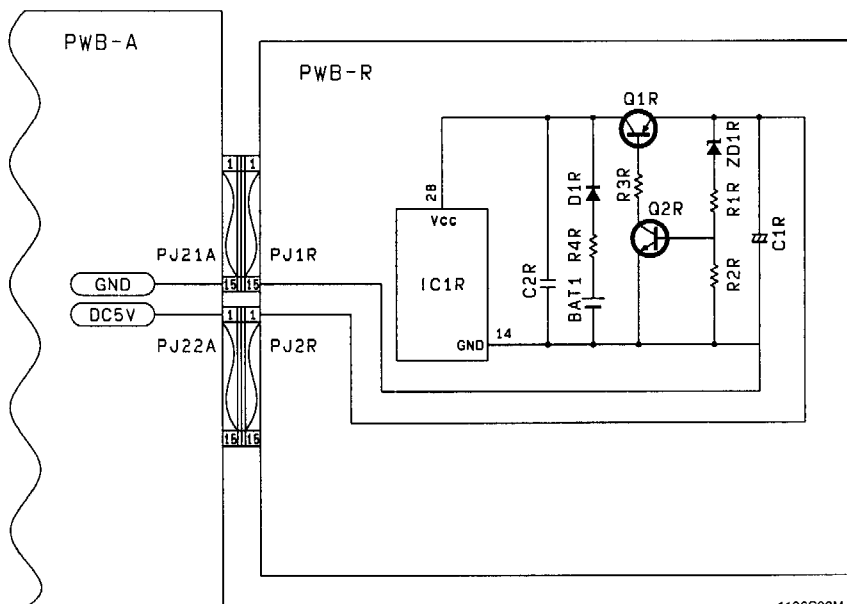
MEMO

24 MEMORY BACKUP

IC1 (RAM) of RAM Board PWB-R connected to Master Board PWB-A stores the setting/adjustment values set in the Tech. Rep. modes as well as the counter counts. Backup Battery BAT1 is mounted on PWB-R to prevent the contents of memory from being lost when the power cord is unplugged or PWB-R removed from the copier. BAT1 requires a voltage of 2 V or more to retain the contents of memory.

Important

As noted above, the RAM stores critical data. If PWB-R has been replaced with a new one, memory must first be cleared and then all settings be made again. It should also be noted that PWB-R should not be replaced at the same time when PWB-A is replaced.



1136C38M

PREFACE 前書き

PARTS MANUAL

1. The part numbers listed in Parts Manual 2 are those which were assigned to the parts making up the machine at the time the machine was originally introduced onto the market. The part numbers listed in all revised Parts Manuals from 3 and onward are only the most up-to-date part numbers of those parts which have been newly added, those old and new parts which are non-interchangeable and those parts which are interchangeable. Also included are the numbers of those parts the use of which has been discontinued.
2. Parts whose numbers are preceded by an asterisk in the Index Column on the List Page are parts to be used in only certain market areas. Therefore, please check the number in the Area column on the List Page and then compare it with the numbers given in the Area Chart on Page II to find out which part number is applicable to your own area.
NOTE: Parts for only certain Market Areas: The part numbers for these parts vary according to market area. In other cases, these parts are used in only restricted areas.
3. The Index Number on the List Page is composed of two numbers and two letters. Generally, only A is used as the first letter of the two letters. However, sometimes B, C, D, etc. are used when one part in the illustration, such as an electrical part or a part which varies according to market area, has two or more part numbers. The second letter of the two letters represents the modification history of that part.
4. The Area Number is listed in the Area Column for only those parts used in certain market areas. This Area Number represents the area listed opposite to it in the Chart given on Page II. Parts having no Area Number listed in the Area Column can be used in all market areas.
5. In Parts Manual 2, the Remarks Column has been left blank. In all revised Parts Manuals from 3 and onward, the machine numbers of those machines in which the part is non-interchangeable are listed. A dash before such machine numbers means that all machines having serial numbers up to and including the number listed are included. A dash after such machine numbers means that all machines having serial numbers from that number and onward are included.
6. In the exploded views in this parts manual, parts (Screws & Washers, etc.) which are indicated with a "four-digit" number are listed in numerical order in the section "SCREWS AND WASHERS". Please check these "four-digit" numbers with the part numbers ("ten-digit" number) which should be used for ordering the parts.
7. All parts numbers consist of "ten digits" which should all be quoted when ordering a part. The price of parts can be obtained by referring to the "Parts Price List" which is separately issued.
8. All information contained in this parts manual is subject to change.

1. パーツマニュアルNo.2には、販売当初の機械を構成している部品が記載されています。No.3以降の改訂版には、廃止された部品、新設された部品、互換性のない旧、新部品、そして互換性のある部品は最新の部品だけが記載されます。
2. リスト部の表示番号に※印がある部品は仕向部品ですので、地域No.をIIページの地域No.対比表で照合して、国内の部品番号を使用してください。
注) 仕向部品………地域により部品番号が異なる、または、一部地域にだけ使用されている部品。
3. リスト部の表示番号は、部品図の番号をあらわす2桁の数字と2桁の補助記号より構成されています。
補助記号の1桁目は、一般にはAだけですが、仕向部品、電気部品のように1つの部品図で複数の部品番号をあらわしている場合にA、B、C、…となっています。補助記号の2桁目は部品の変更経歴をあらわしています。
4. リスト部の地域No.は仕向部品にだけ記載されており、IIページでその部品の使用されている地域をあらわしています。地域No.のないものは全地域使用部品です。
5. パーツマニュアルNo.2では、リスト部の備考欄は空欄になっています。No.3以降の改訂版では互換性のない部品がある場合に対象機械番号が記載されます。
機械番号の前に一記号がある場合は、その番号以前の機械が対象、後に一記号がある場合には、その番号以降の機械が対象です。
6. ネジ・ワッシャー類は、数字4桁の表示番号を使用しています。
ネジ・ワッシャー部で照合の上、10桁の部品番号を使用してください。
7. 部品番号は10桁で構成されています。注文は必ず10桁の部品番号を使用してください。
8. このパーツマニュアルの内容は予告なく変更されることがあります。

AREA CHART 地域No.対比表

AREA No. 地 域 No.	AREA 該当地域	(JAPAN) 国 内	AREA No. 地 域 No.	AREA 該当地域	(JAPAN) 国 内
0400	METRIC	○	2600	200/220/240V	
0510	100/115/120V	○	2606	200V	
0511	100/115/120/127V	○	2612	220/240V	
0514	100/127V	○	2704	USA/CANADA	
0600	100V	○	2705	EXCEPT JAPAN/USA/CANADA	
0702	EXCEPT USA/CANADA	○	2706	EUROPE	
0703	EXCEPT EUROPE	○	2713	EXCEPT JAPAN/USA/CANADA/EUROPE	
0710	EXCEPT USA/CANADA/EUROPE	○	2715	EXCEPT JAPAN/EUROPE	
0715	JAPAN/USA/CANADA/EUROPE	○	2720	USA/CANADA/EUROPE	
1000	JAPAN	○	2765	HONG KONG	
2000	EXCEPT JAPAN				
2300	INCH				
2303	INCH (EXCEPT USA/CANADA)				
2400	METRIC (EXCEPT JAPAN)				
2410	METRIC (EXCEPT JAPAN/HONG KONG)				
2500	115V				
2504	115V/120V				
2520	120V				
2550	127V				

We recommend that you cross out from your Parts Manuals those parts numbers which do not apply to your area so that no error is made when ordering parts.

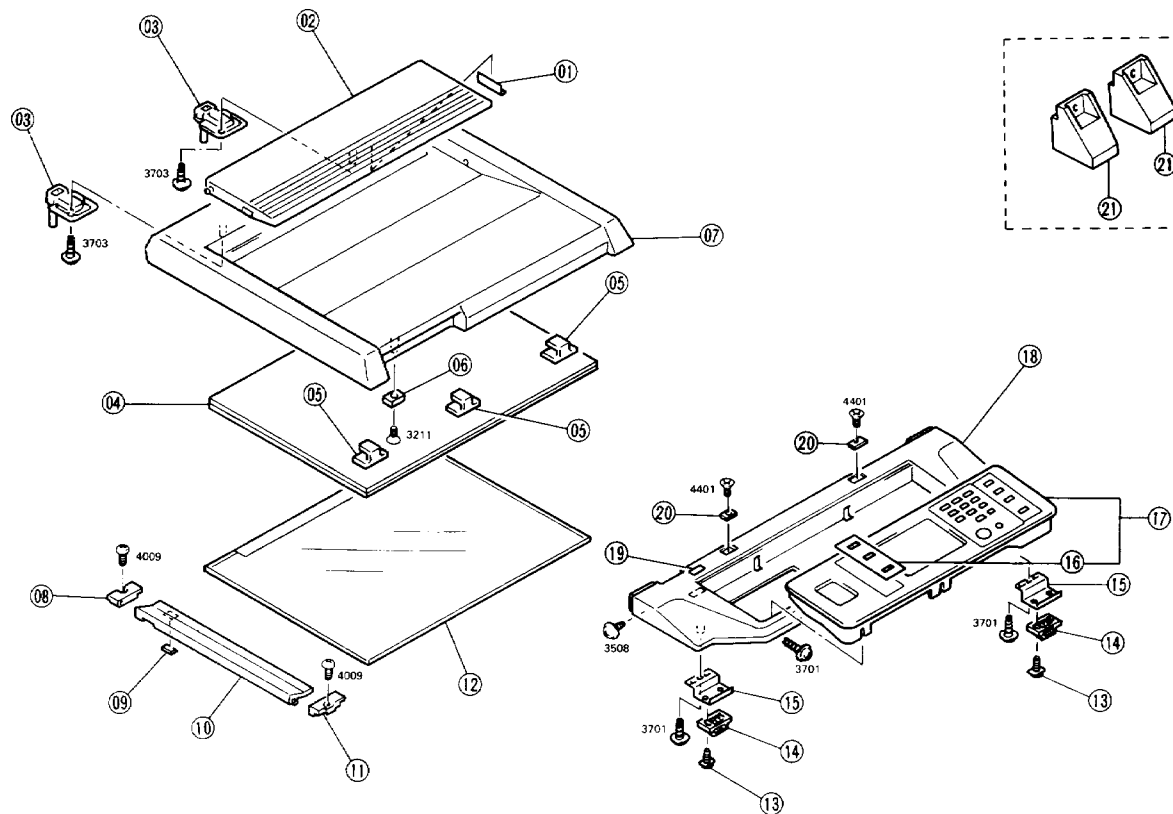
注文時の部品番号まちがいを防ぐために、マニュアル内の国内以外の部品番号をあらかじめ削除しておくことをおすすめします。

THE PARTS MANUAL IS EFFECTIVE WITH MACHINES SERIALLY NUMBERED XX0251(EP4050) AND ONWARDS.
このパーツマニュアルは、機械番号 XX0251(EP4050) 以降を対象に作成したものです。
XX0251(EP3050)

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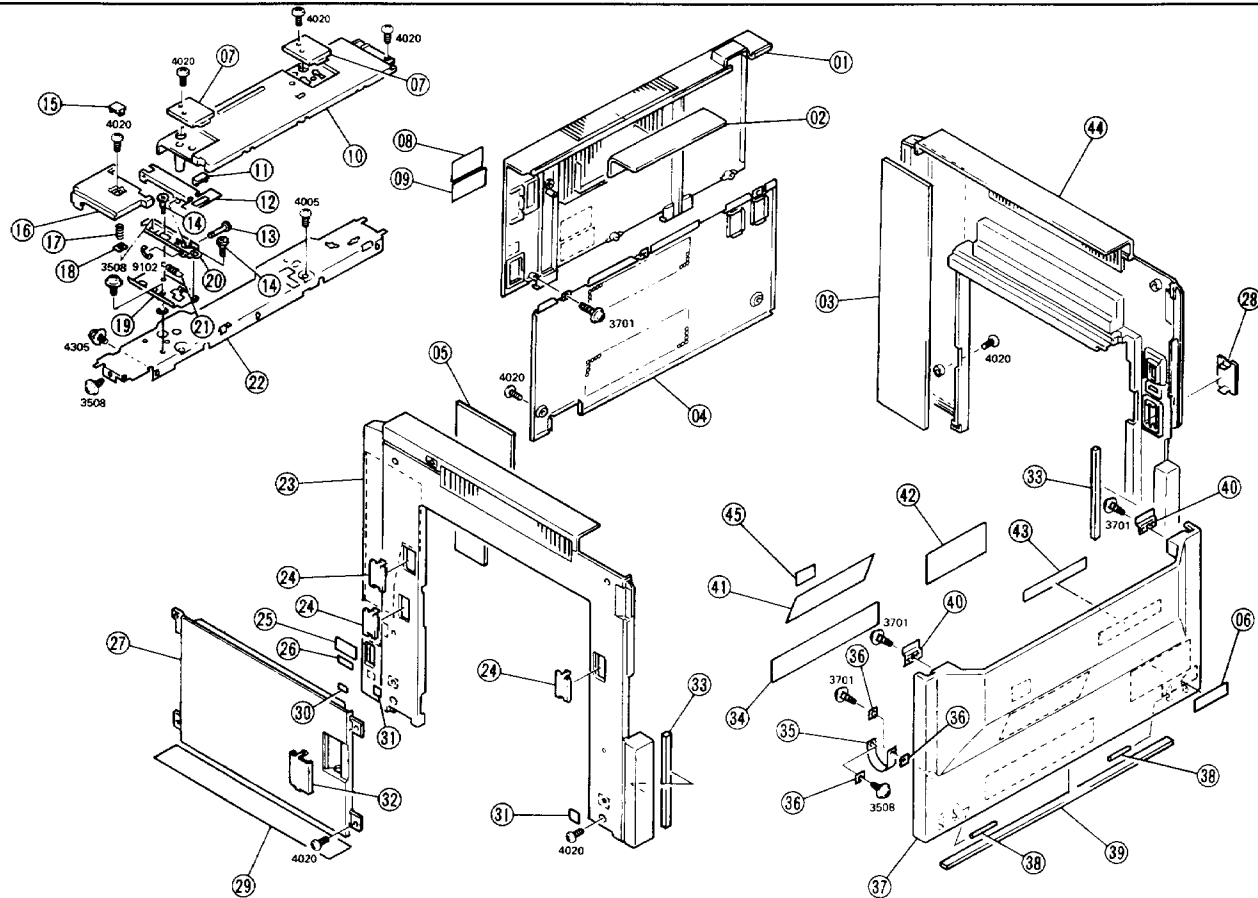
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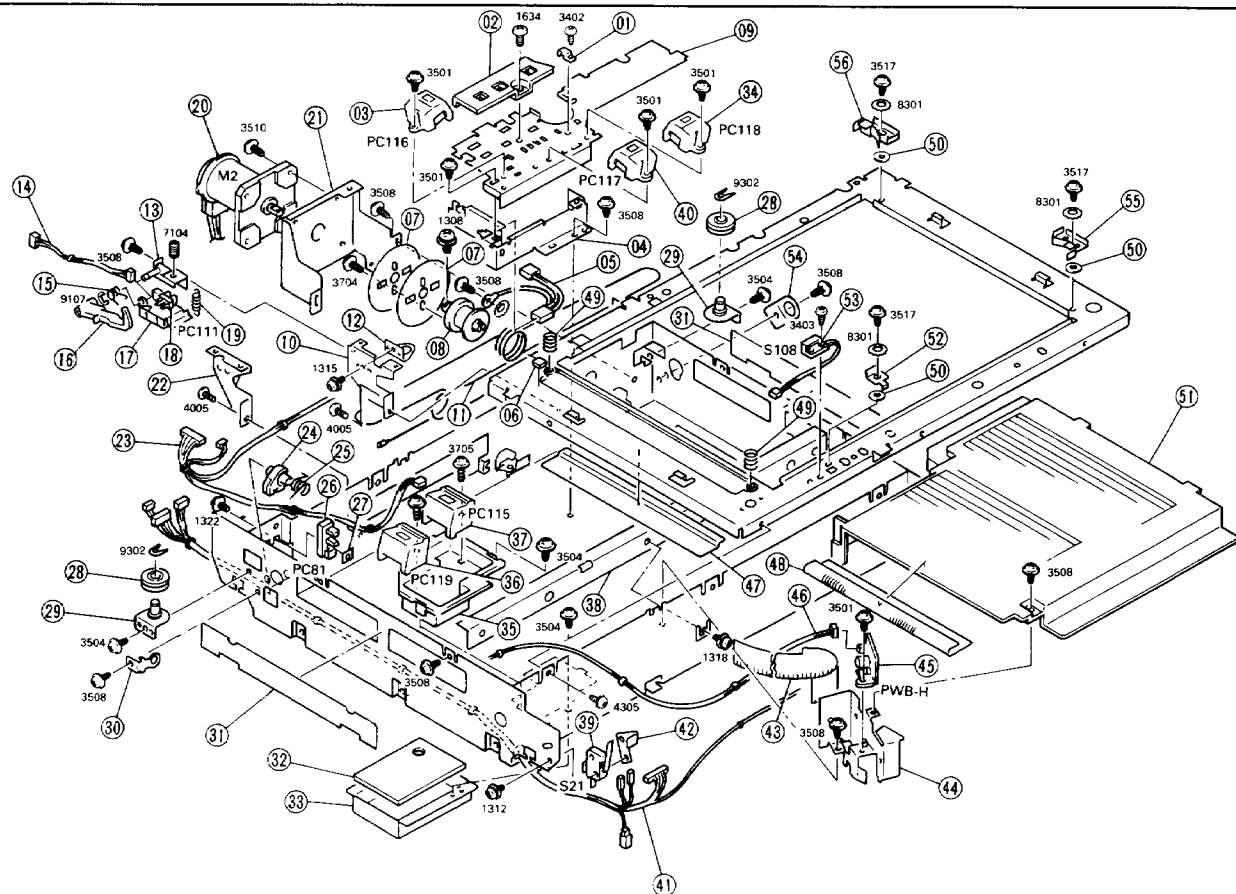
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01AA	1139-1728-01	POLYESTER FILM ポリエステルフィルム	1								
02AA	1139-1702-02	ORIGINAL HOLDER オリジナルホルダー	1								
03AA	1139-1705-01	HINGE ヒンジ	2								
04AA	1139-1704-02	PAD パッド	1								
05AA	1139-1703-02	SLIDER スライダー	3								
06AA	9326-2820-11	MAGNET マグネット	1								
07AA	1139-1701-03	ORIGINAL COVER オリジナルカバー	1								
08AA	1139-1906-01	HOLDER ホルダー	1								
09AA	1139-1915-02	SPONGE スポンジ	1								
*10AA	1139-1901-04	WIDTH SCALE 横幅スケール	1	1000							
*10BA	1139-1902-04	WIDTH SCALE 横幅スケール	1	2300							
*10CA	1139-1903-04	WIDTH SCALE 横幅スケール	1	2400							
11AA	1139-1905-01	HOLDER ホルダー	1								
*12AA	1139-0162-02	ORIGINAL GLASS オリジナルガラス	1	1000							
*12BA	1139-0163-02	ORIGINAL GLASS オリジナルガラス	1	2300							
*12CA	1139-0164-02	ORIGINAL GLASS オリジナルガラス	1	2400							
13AA	1053-1324-01	TAPPING SCREW タッピングネジ	4								
14AA	1500-2640-04	MAGNET CATCH マグネットキャッチ	2								
15AA	1136-1022-02	BRACKET ブラケット	2								
*16AA	1134-6055-01	FACE SHEET フェイスシート	1	2706							
*17AA	1134-0111-13	CONTROL PANEL コントロールパネル	1	1000							
*17BA	1134-0112-13	CONTROL PANEL コントロールパネル	1	2715							
*17CA	1134-0113-13	CONTROL PANEL コントロールパネル	1	2706							
18AA	1136-1011-04	TOP COVER トップカバー	1								
*19AA	1134-1012-01	LABEL 4050 ラベル 4050	1	2704							
*19BA	1135-1012-01	LABEL 3050 ラベル 3050	1	2704							
20AA	1139-1907-01	PLATE プレート	2								
*21AA	1134-7501-01	STOPPER ストッパー	2	2000							



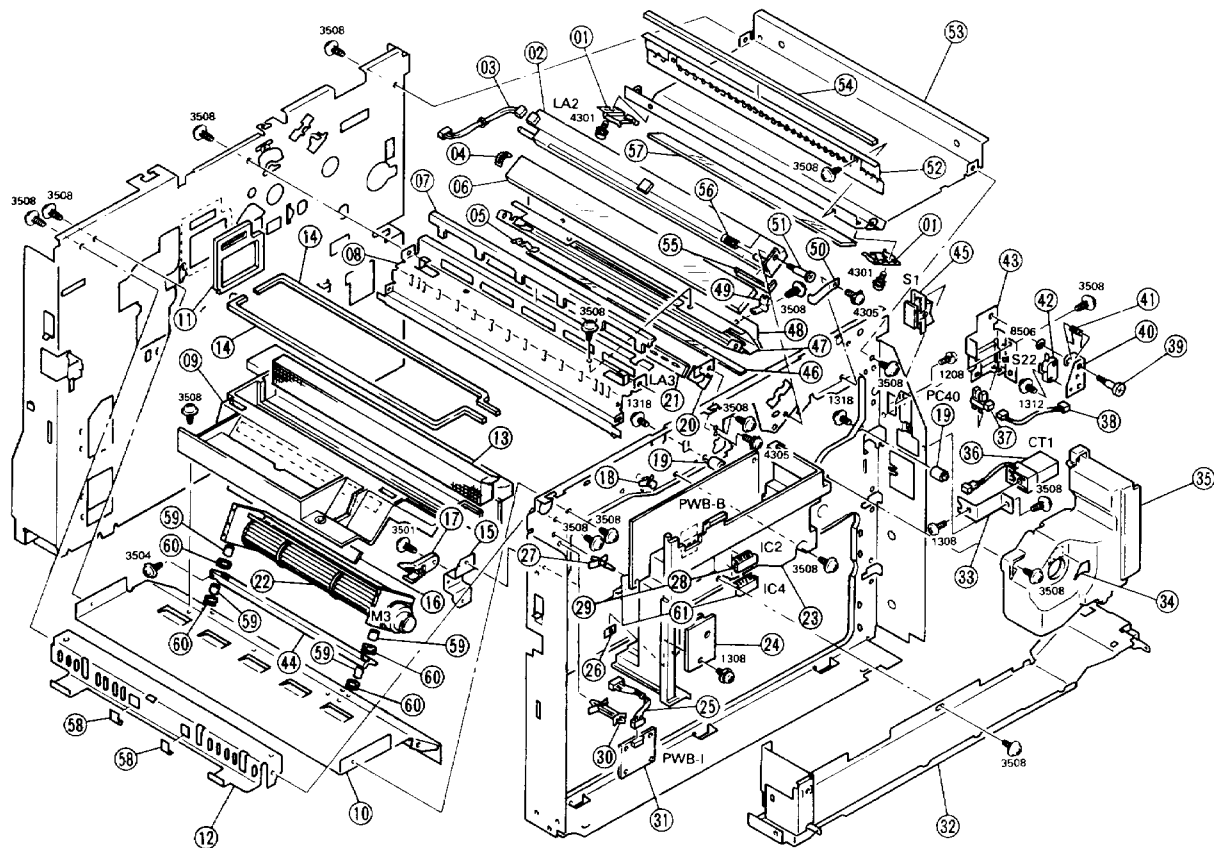
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01AA	1136-1003-04	REAR COVER-UPR 22021311- FILTER	1			31AA	4425-1059-01	SEAL シール	2		
02AA	1136-1353-02	SPONGE スポンジ	1			32AA	4425-3936-02	COVER カバー	1		
*03AA	1136-2031-01	SPONGE スポンジ	1	2706		*33AA	1136-2036-01	SPONGE スポンジ	2	2706	
04AA	1136-1002-03	REAR COVER-LWR 22021311- SPONGE	1			*34AA	1136-7309-02	LABEL ラベル	1	1000	
*05AA	1136-2032-01	SPONGE スポンジ	1	2706		*34BA	1136-7310-02	LABEL TONER BOTTLE ラベル トナーボトル	1	2706	
*06AA	1139-7347-01	LABEL CS PRO ラベル CS PRO	1	0702		*34CA	1136-7311-02	LABEL TONER BOTTLE ラベル トナーボトル	1	2715	
07AA	1139-1035-01	COVER カバー	2			35AA	1136-1032-01	BAND バンド	1		
*08AA	1076-7406-01	LABEL FUSE BREAKER ラベル	1	2706		36AA	1053-3103-01	PLATE プレート	3		
*09AA	1065-7015-01	LABEL CAUTION ラベル	1	2706		*37AA	1136-1001-05	FRONT COVER フロントカバー	1	0702	
10AA	1139-1002-02	TOP COVER-RR ラベル	1			*37BA	1135-1001-05	FRONT COVER フロントカバー	1	0702	
11AA	1136-1901-01	SPACER スパーサー	1			*37CA	1136-1041-03	FRONT COVER フロントカバー	1	2704	
12AA	1139-1918-01	STOPPER ストッパー	1			38AA	1136-1019-01	SHAFT シャフト	2		
13AA	1139-1921-01	SHAFT シャフト	1			*39AA	1136-2037-01	SPONGE スポンジ	1	2706	
14AA	1139-1919-02	SHOULDER SCREW ショルダーネジ	2			40AA	1033-3102-01	PLATE プレート	2		
15AA	1139-1039-01	COVER カバー	1			*41AA	1136-7303-01	LABEL ラベル	1	1000	
16AA	1139-1041-01	COVER カバー	1			*41BA	1136-7304-01	LABEL JAM REMOVAL ラベル	1	2706	
17AA	1139-1923-01	PRESSURE SPRING 77222222- POLYESTER FILM	1			*41CA	1136-7305-01	LABEL JAM REMOVAL ラベル	1	2715	
18AA	1139-1922-02	POLYESTER FILM 77222222- BRACKET	1			42AA	1065-7301-03	LABEL ラベル	1		
19AA	1139-1916-02	BRACKET ブラケット	1			*43AA	1139-7328-01	LABEL AVOID ラベル	1	2704	
20AA	1139-1917-03	SLIDER スライダー	1			44AA	1136-1004-06	RIGHT COVER ラベル	1		
21AA	1139-1920-01	TENSION SPRING 77222222- FRAME	1			45AA	4444-7310-02	LABEL MONITOR ラベル	1		
22AA	1136-1316-03	LEFT COVER ラベル	1								
23AA	1136-1005-04	COVER カバー	3								
24AA	1136-1030-01	LABEL CAUTION ラベル	1	2704							
*25AA	1500-2341-07	LABEL 250V 10A ラベル	1	2600							
*26AA	1067-7301-01	LABEL CB11 ラベル	1	2706							
*26BA	1061-7351-01	LEFT COVER-LWR ラベル	1								
27AA	1136-1026-04	COVER カバー	1								
28AA	1139-1015-01	POLYESTER FILM 77222222- LABEL 250V 15A ラベル	1	2706							
*29AA	1136-2035-01	LABEL 250V 10A ラベル	1	0511							
*30AA	1500-2331-60	LABEL CB12 ラベル	1	2600							
*30BA	1067-7301-01	LABEL CB12 ラベル	1	2706							
*30CA	1061-7352-01										



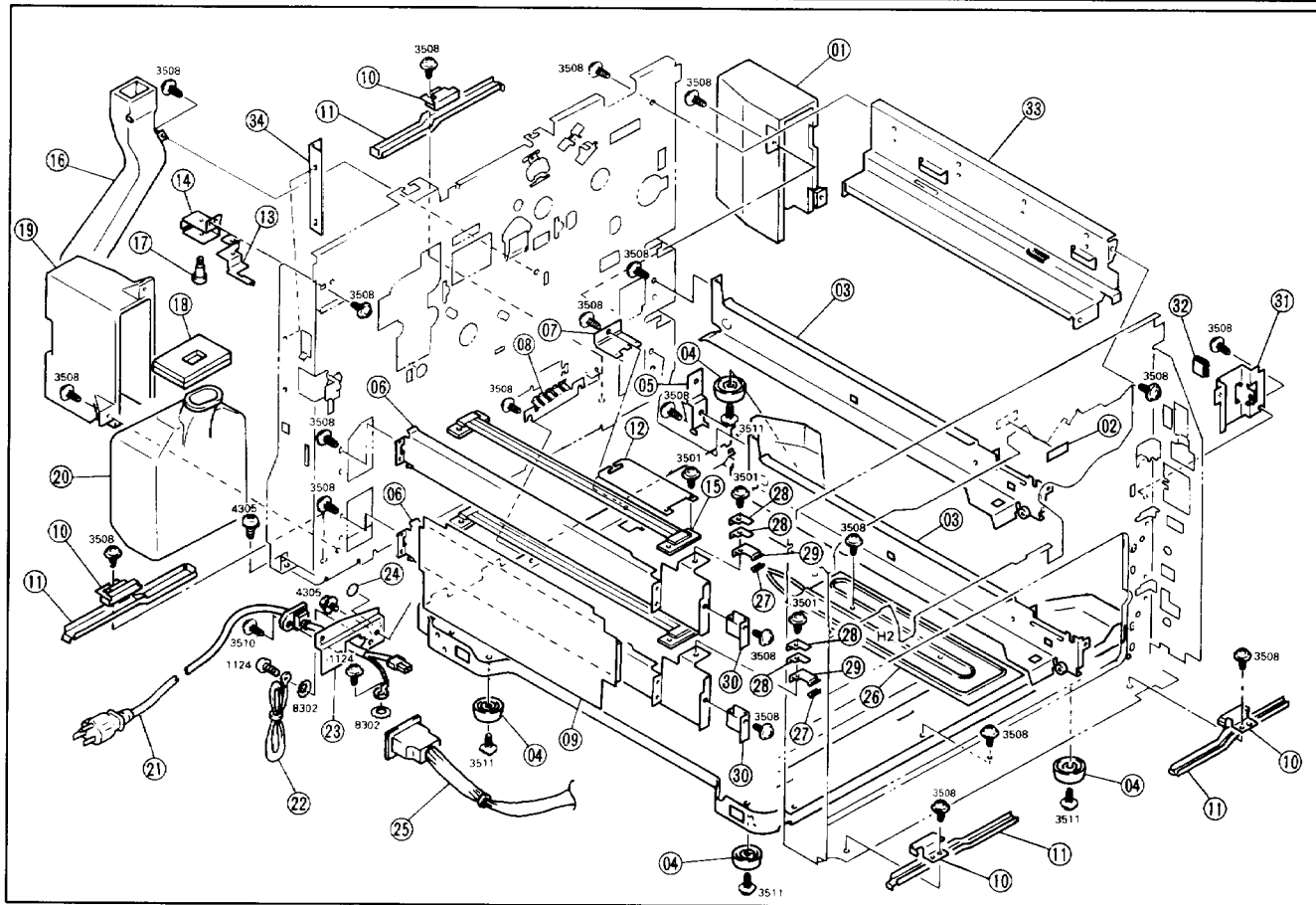
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01AA	1021-4707-01	CORD CLAMP コードクランプ	1			32AA	1136-1499-01	SPONGE スポンジ	1		
02AA	1136-1459-03	COVER カバー	1			33AA	1136-1498-01	COVER カバー	1		
*03AA	9335-1310-11	PHOTO INTERRUPTER フォトインタラプター	1	0400		34AA	9335-1310-11	PHOTO INTERRUPTER フォトインタラプター	1		
*03BA	9335-1310-11	PHOTO INTERRUPTER フォトインタラプター	1	2300		35AA	1139-1324-02	HOLDER ホルダー	1		
04AA	1136-1458-02	BRACKET ブラケット	1			*36AA	9335-1310-21	PHOTO INTERRUPTER フォトインタラプター	1	0400	
05AA	1136-6822-03	HARNESS ハーネス	1			37AA	9335-1310-21	PHOTO INTERRUPTER フォトインタラプター	1		
06AA	1139-1909-01	SPONGE スポンジ	1			38AA	1136-1315-01	RAIL レール	1		
07AA	1134-1371-01	PLATE プレート	2			39AA	9331-2310-21	MICROSWITCH マイクロスイッチ	1		
08AA	1134-1365-02	PULLEY プーリー	1			40AA	9335-1310-11	PHOTO INTERRUPTER フォトインタラプター	1		
09AA	1136-1452-04	BRACKET ブラケット	1			41AA	1134-6817-02	HARNESS ハーネス	1		
10AA	1134-1364-01	BRACKET ブラケット	1			41BA	1134-6824-01	HARNESS ハーネス	1		
11AA	1134-1367-02	WIRE ワイヤ	1			42AA	1076-1203-02	PLATE NUT プレートナット	1		
12AA	1136-1371-01	BRACKET ブラケット	1			43AA	1136-1453-02	POLYESTER FILM ポリエステルフィルム	1		
13AA	1139-1724-01	AXLE PLATE シャフトプレート	1			44AA	1136-1491-02	BRACKET ブラケット	1		
14AA	1139-6815-01	HARNESS ハーネス	1			45AA	1136-0108-01	PW BOARD-H(WITH IC) プリント基板 H	1		
15AA	1139-1724-01	TORSION SPRING トルションスプリング	1			46AA	1136-6820-02	HARNESS ハーネス	1		
16AA	1139-1722-02	LEVER レバー	1			47AA	1136-1320-03	POLYESTER FILM ポリエステルフィルム	1		
17AA	1139-1721-01	BRACKET ブラケット	1			48AA	1136-1455-02	POLYESTER FILM ポリエステルフィルム	1		
18AA	9335-1311-01	PHOTO INTERRUPTER フォトインタラプター	1			49AA	1139-1904-02	PRESSURE SPRING 圧縮スプリング	2		
19AA	1139-1725-01	TENSION SPRING テンションスプリング	1			50AA	1076-1365-01	WASHER ワッシャー	3		
20AA	9312-1311-01	MOTOR モーター	1			51AA	1136-1451-02	COVER カバー	1		
21AA	1134-1370-01	BRACKET ブラケット	1			52AA	1139-1318-12	SUPPORT サポート	1		
22AA	1136-1317-01	REINFORCE PLATE 強化プレート	1			53AA	9334-2320-31	REED SWITCH リードスイッチ	1		
*23AA	1136-6818-02	HARNESS ハーネス	1	0400		54AA	1139-1331-02	STOPPER ストッパー	1		
*23BA	1136-6819-03	HARNESS ハーネス	1	2300		55AA	1139-1319-12	SUPPORT サポート	1		
24AA	1067-1418-01	LEVER レバー	1			56AA	1139-1320-12	FRONT フロント	1		
25AA	1136-1381-01	TORSION SPRING トルションスプリング	1					REAR リア	1		
26AA	9335-1310-51	PHOTO INTERRUPTER フォトインタラプター	1					WASHER ワッシャー			
27AA	1033-3818-01	PLATE NUT プレートナット	2								
28AA	1500-2521-05	BALL BEARING ボールベアリング	2								
29AA	1136-0223-01	AXLE PLATE シャフトプレート	2								
30AA	1065-1604-01	BRACKET ブラケット	1								
31AA	1136-1319-01	FILTER フィルター	2								



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01AA	1136-1482-01	SET PLATE 77271111	2			33AA	1136-2118-01	BRACKET トリックハン	1		
02AA	1134-6501-02	PWB-LAMP(ND IC) 77271111	1			34AA	1136-7308-01	LABEL M3 カフター	1		
03AA	1136-6829-01	HARNESS ハナ	1			35AA	1136-1021-02	COVER カフター	1		
04AA	1036-3818-01	PLATE SPRING プレートスプリング	1			36AA	9323-1310-11	COUNTER カウンタ	1		(CT1)
05AA	1136-4512-01	PLATE SPRING プレートスプリング	1			37AA	9335-1311-01	PHOTO INTERRUPTER フォトインタラプター	1		(PC40)
06AA	1134-1306-02	MIRROR ミラー	1			38AA	1136-6812-01	HARNESS ハナ	1		
07AA	1136-4121-02	SPONGE スポンジ	1			39AA	1100-1344-12	SHOULDER SCREW ショルダー	1		
08AA	1136-4501-03	GUIDE PLATE ガイドプレート	1			40AA	1136-3172-02	BRACKET トリックハン	1		MICROSWITCH
09AA	1134-4117-02	DUCT ダクト	1			41AA	1061-3046-01	TORSION SPRING トルションスプリング	1		
10AA	1134-2008-02	GUIDE PLATE ガイドプレート	1			42AA	9331-2310-21	MICROSWITCH マイクロスイッチ	1		(S22)
11AA	1136-4013-02	SPONGE スポンジ	1			43AA	1136-3173-02	PHOTO INT フォトインタラプター	1		
12AA	1136-4156-03	BRACKET トリックハン	1			44AA	1134-4116-02	BRACKET トリックハン	1		FAN MOTOR
13AA	1134-4118-01	OZONE FILTER オゾンフィルター	1			45AA	9332-5310-31	SWITCH スイッチ	1		MAIN (S1)
14AA	1134-4123-02	SPONGE スポンジ	2			46AA	1136-4513-01	FILTER フィルター	1		
15AA	1134-3725-01	BRACKET トリックハン	1			47AA	1136-4114-02	SHIELD PLATE シールドプレート	1		
16AA	1134-4121-01	SPONGE スポンジ	1			48AA	1136-4119-01	SUPPORT PLATE サポートプレート	1		
17AA	0704-4127-01	PLASTIC CATCH プラスチックキャッチ	1			49AA	1033-3807-01	FRONT フロント	1		
18AA	9384-1920-51	PWB SUPPORT プリント基板サポート	1			50AA	1136-5238-01	PLATE SPRING プレートスプリング	1		
19AA	1136-2003-02	AXLE アクスル	2			51AA	1100-1344-15	SHOULDER SCREW ショルダー	1		
20AA	1136-4502-01	BRACKET トリックハン	1			52AA	1136-4115-01	SHIELD PLATE シールドプレート	1		
21AA	9351-1310-21	TUBE LAMP チューブランプ	1			53AA	1136-2014-01	MOUNTING PLATE トリックハン	1		FILTER
22AA	9313-1310-92	FAN MOTOR ファンモーター	1			54AA	1136-4116-02	LIOU SHIELD リウシールド	1		
23AA	1136-1020-03	COVER カバー	1			55AA	1035-5619-03	SPONGE スポンジ	1		
24AA	1136-1027-03	COVER カバー	1			56AA	1052-3954-01	PRESSURE SPRING プレッシャースプリング	1		
25AA	1136-6840-01	HARNESS ハナ	1			57AA	1136-1481-01	FILTER GLASS フィルターガラス	1		
26AA	1100-3190-01	PLATE NUT プレートナット	1			58AA	1076-3122-01	POLYESTER FILM ポリエステルフィルム	2		
27AA	9384-1010-31	PWB SUPPORT 11.11H プリント基板サポート	2			59AA	1132-2043-01	CD LAR カラー	4		
28AA	1134-6602-01	IC IC	1			60AA	1132-2044-01	SPACER スペーサー	4		
28BA	1135-6602-01	IC IC	1			*61AA	1134-6603-01	IC IC	1		(IC4)
*29AA	1134-0102-05	PW BOARD-B(WITH IC) プリント基板 B	1	1000		*61BA	1134-6604-01	IC IC	1		(IC4)
*29BA	1134-0105-05	PW BOARD-B(WITH IC) プリント基板 B	1	2300		*61CA	1134-6605-01	IC IC	1		(IC4)
*29CA	1134-0104-05	PW BOARD-B(WITH IC) プリント基板 B	1	2400							
*29DA	1135-0102-02	PW BOARD-B(WITH IC) プリント基板 B	1	1000							
*29EA	1135-0105-02	PW BOARD-B(WITH IC) プリント基板 B	1	2300							
*29FA	1135-0104-02	PW BOARD-B(WITH IC) プリント基板 B	1	2400							
30AA	9384-1220-31	PWB SUPPORT 22.23H プリント基板サポート	4								
31AA	1134-0109-12	PW BOARD-I(ND IC) プリント基板 I	1								
32AA	1136-1015-03	FRAME フレーム	1								



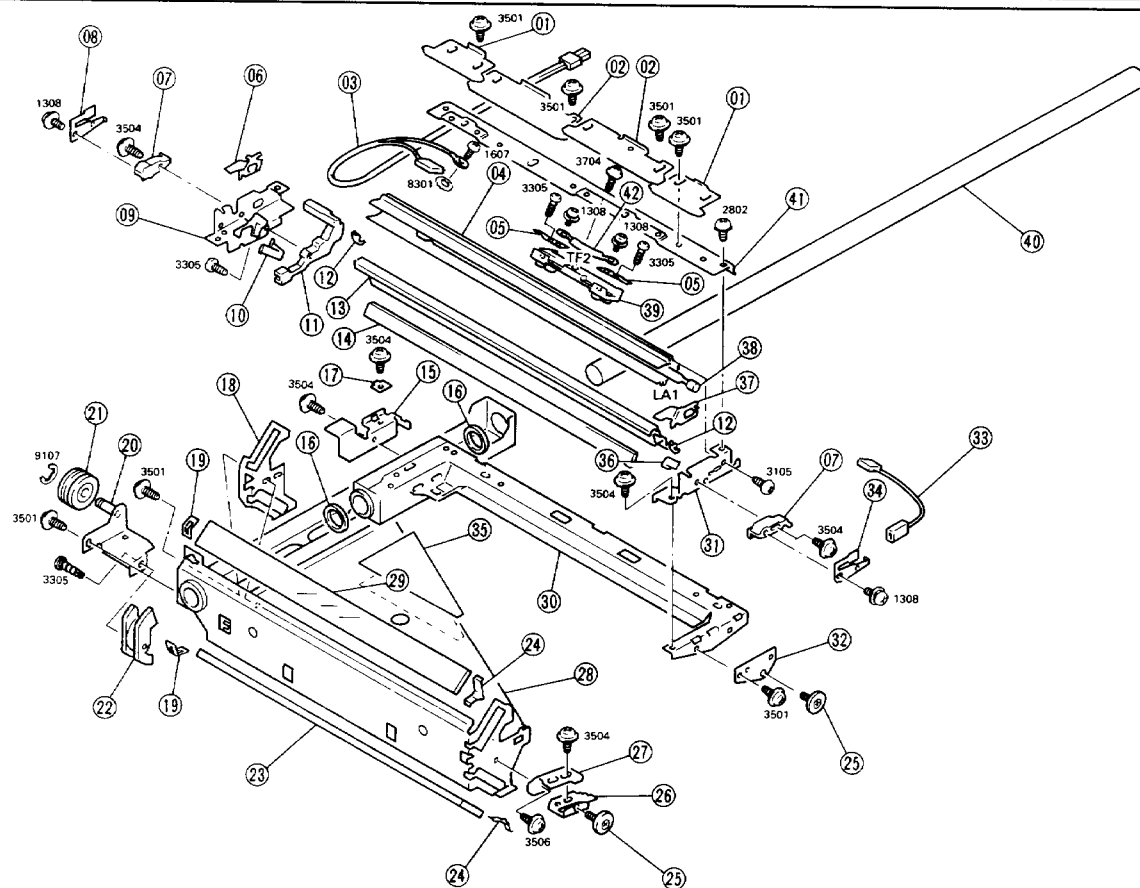
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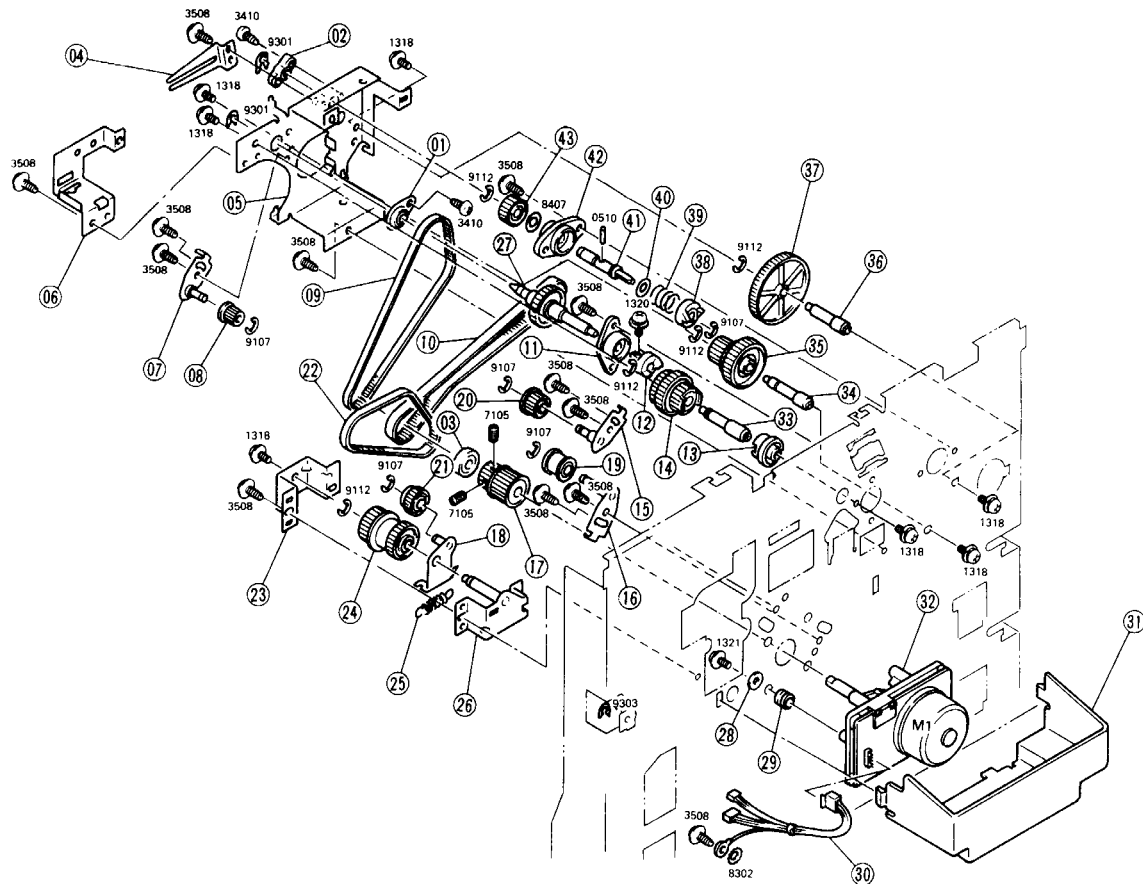


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01AA	1139-1410-01	APERTURE BLADE アパーチャブレード	2			34AA	1139-1423-01	TERMINAL ターミナル	1		
02AA	1065-1405-03	APERTURE BLADE アパーチャブレード	2			35AA	1136-1382-01	LIGHT SHIELD ライトシールド	1		
03AA	1136-6804-02	HARNESS ハーネス	1			36AA	1139-1418-02	PLATE SPRING プレートスプリング	1		
04AA	1139-1403-01	REFLECTOR 反射鏡	1			37AA	1139-1405-01	REFLECTOR 反射鏡	1		
05AA	1028-3873-01	TERMINAL ターミナル	2			*38AA	9351-2310-71	TUBE LAMP チューブランプ	1	0511	
06AA	1139-1404-01	REFLECTOR 反射鏡	1			*38BA	9351-2310-81	TUBE LAMP チューブランプ	1	2600	
07AA	1080-1401-03	HOLDER ホルダー	2			39AA	1139-1416-01	SHAFT シャフト	1		
08AA	1139-1424-01	TERMINAL ターミナル	1			40AA	1136-1318-02	SHAF シャフト	1		
09AA	1139-1401-03	REAR FRAME リアフレーム	1			41AA	1139-1409-03	BRACKET ブラケット	1		
10AA	1067-1311-03	PLATE SPRING プレートスプリング	1			42AA	1139-0403-02	THERMAL FUSE 熱感電線	1		
11AA	1136-1337-02	GUIDE ガイド	1								
12AA	1033-4803-01	BUSH ブッシュ	2								
13AA	1136-1332-02	REFLECTOR 反射鏡	1								
14AA	1134-1301-01	MIRROR ミラー	1								
15AA	1136-1347-01	BRACKET ブラケット	1								
16AA	1139-1334-02	PIAD パイア	2								
17AA	1136-1348-01	SET PLATE セットプレート	1								
18AA	1136-1357-01	FRAME フレーム	1								
19AA	1065-1504-02	PLATE SPRING プレートスプリング	2								
20AA	1136-0155-01	BRACKET ブラケット	1								
21AA	1139-1608-01	BALL BEARING ボールベアリング	1								
22AA	1136-1363-01	GUIDE ガイド	1								
23AA	1134-1303-02	MIRROR ミラー	1								
24AA	1065-1506-02	PLATE SPRING プレートスプリング	2								
25AA	1139-1473-01	BALL BEARING ボールベアリング	2								
26AA	1136-1362-01	BRACKET ブラケット	1								
27AA	1136-1361-01	BRACKET ブラケット	1								
28AA	1136-0154-04	2ND SLIDER 2ndスライダー	1								
29AA	1134-1302-01	MIRROR ミラー	1								
30AA	1134-0153-04	1ST SLIDER 1stスライダー	1								
31AA	1139-1402-03	FRONT FRAME フロントフレーム	1								
32AA	1136-1349-01	BRACKET ブラケット	1								
33AA	1139-6808-01	HARNESS ハーネス	1								

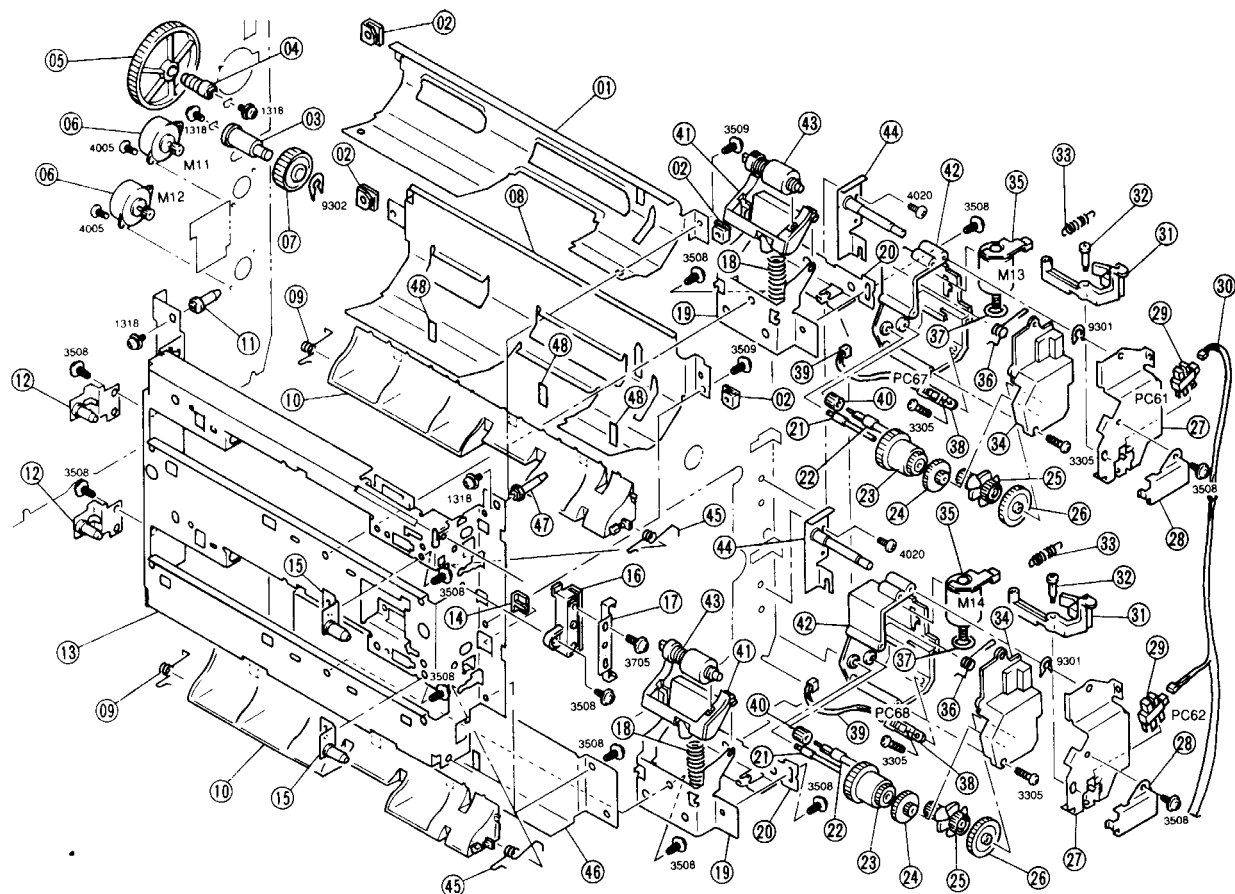
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01AA	1136-1457-02	COVER	1			32AA	1065-1707-01	BRACKET	1		
02AA	1136-1406-12	SUPPORT PLATE	1			33AA	1065-1802-02	PLATE SPRING	2		
03AA	1136-0189-02	LENS	1			34AA	9314-1310-61	MOTOR	1		(M6)
04AA	1136-1454-01	POLYESTER FILM	1			35AA	1134-1304-01	MIRROR	2		
05AA	1136-0208-01	BRACKET	1			36AA	1136-1466-02	LIGHT SHIELD	1		
06AA	1136-1407-01	COLLAR	1			37AA	1136-1461-01	HARNES	1		
07AA	1136-1421-02	HOLDER	1			38AA	1136-6817-01	HARNES	1		
08AA	1139-1523-02	SPRING	2			39AA	1065-1803-01	PLATE SPRING	2		
09AA	1136-1439-01	CAM 0	1			40AA	1136-0211-05	FRAME	1		
09BA	1136-1442-01	CAM +	1			41AA	1136-1465-01	SHOULDER SCREW	1		
09CA	1136-1443-01	CAM -	1			42AA	1065-1855-02	GEAR 16/77T	1		
10AA	1136-1497-03	GUIDE	1			43AA	1065-1854-02	TENSION SPRING	1		
11AA	1139-1509-01	SUPPORT PLATE	1			44AA	1136-1474-01	ADJUSTING PLATE	1		
12AA	1136-1422-02	HOLDER	1			45AA	1136-1472-01	GUIDE RAIL	1		
13AA	1136-1423-01	BUSH	1			46AA	1136-1475-01	BRACKET	1		
14AA	1139-0201-01	PULLEY	1			47AA	1136-1469-01	POLYESTER FILM	1		
15AA	1139-1521-01	SHAFT	1			48AA	1136-1495-01	POLYESTER FILM	1		
16AA	1136-6808-01	HARNES	1			49AA	1136-0213-02	BRACKET	1		
17AA	1136-1444-02	SUPPORT PLATE	1			50AA	9314-1310-31	MOTOR	1		(M7)
18AA	9335-1310-41	PHOTO INTERRUPTER	2		(PCB6,90)	51AA	1136-1496-01	LIGHT SHIELD	1		
19AA	1136-1441-02	HOLDER	1			52AA	1136-1445-01	POLYESTER FILM	1		
20AA	9384-1900-58	PWB SUPPORT 12.7H	2			53AA	1136-1467-02	PLATE SPRING	1		
21AA	9384-1120-21	PW BOARD SPACER	1								
22AA	1136-1494-01	LIGHT SHIELD PLATE	1								
23AA	1136-1493-01	LIGHT SHIELD PLATE	1								
24AA	1136-1460-01	LIGHT SHIELD PLATE	1								
25AA	1139-0202-01	WIRE PULLEY	1								
26AA	1136-1473-01	ADJUSTING PLATE	1								
27AA	1061-6869-01	GROUND WIRE	1								
28AA	1065-1760-02	TENSION SPRING	1								
29AA	1136-1440-01	PULLEY 108T	1								
30AA	1065-0229-01	BRACKET	1								
31AA	1136-1433-01	WIRE	1								



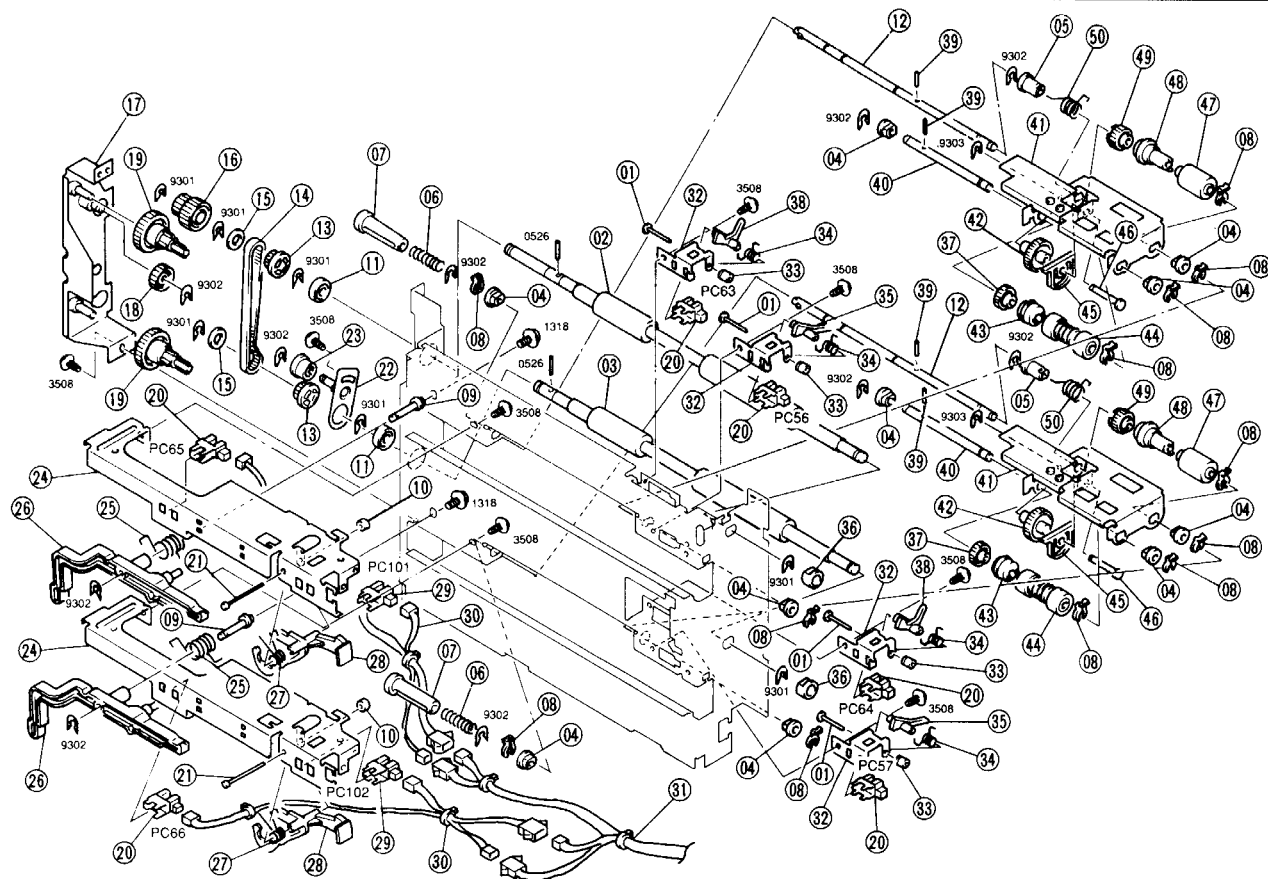
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01AA	1039-3623-01	BUSHING クワツ	1			34AA	1136-2514-01	SHAFT シャフト	1		
02AA	1065-2753-01	BUSHING クワツ	1			35AA	1136-2510-01	PLY GEAR 24/28/48T プーリーギア	1		
03AA	1134-2502-01	BALL BEARING ボールベアリング	1			36AA	1136-2506-01	SHAFT シャフト	1		
04AA	1076-2541-01	GROUND PLATE グランドプレート	1			37AA	1134-2508-01	GEAR 45T ギア	1		
05AA	1136-2570-02	MOUNTING PLATE マウントプレート	1			38AA	1136-2528-01	PAWL パウル	1		
06AA	1136-2117-03	SUPPORT PLATE サポートプレート	1			39AA	1400-1185-10	PRESSURE SPRING プレッシャースプリング	1		
07AA	1136-0203-02	TENSION LEVER テンションレバー	1			40AA	1200-1641-01	WASHER ワッシャー	1		
08AA	1500-2513-18	PULLEY 24T プーリー	1			41AA	1136-2512-01	SHAFT シャフト	1		
09AA	1136-2503-01	TIMING BELT タイミングベルト	1			42AA	1136-2527-02	HOLDER ホルダー	1		
10AA	1136-2504-01	TIMING BELT タイミングベルト	1			43AA	1134-2529-01	GEAR 36T ギア	1		
11AA	1136-2533-02	HOLDER ホルダー	1								
12AA	1136-2523-01	PAWL パウル	1								
13AA	1136-5507-01	CAM カム	1								
14AA	1136-2507-01	PLY GEAR 56/25/40T プーリーギア	1								
15AA	1136-0205-02	TENSION LEVER テンションレバー	1								
16AA	1136-0202-02	TENSION LEVER テンションレバー	1								
17AA	1134-2501-01	PULLEY 28/30T プーリー	1								
18AA	1136-0207-01	BRACKET ブラケット	1								
19AA	1136-2530-02	PULLEY プーリー	1								
20AA	1136-2532-01	PULLEY 24T プーリー	1								
21AA	1136-2509-01	GEAR 24T ギア	1								
22AA	1136-2502-01	TIMING BELT タイミングベルト	1								
23AA	1136-2522-02	BRACKET ブラケット	1								
24AA	1136-2517-01	PLY GEAR 40/35T プーリーギア	1								
25AA	1400-2153-08	TENSION SPRING テンションスプリング	1								
26AA	1136-0204-01	BRACKET ブラケット	1								
27AA	1136-2505-01	GEAR 40T ギア	1								
28AA	1200-1531-01	WASHER ワッシャー	4								
29AA	1136-2534-02	RETAINING RING リテーニングリング	4								
30AA	1134-6814-02	HARNESS ハーネス	1								
31AA	1136-2005-04	COVER カバー	1								
32AA	9314-2310-42	PWB-MOTOR(WITH IC) モーター	1		(M1)						
33AA	1136-2511-01	SHAFT シャフト	1								



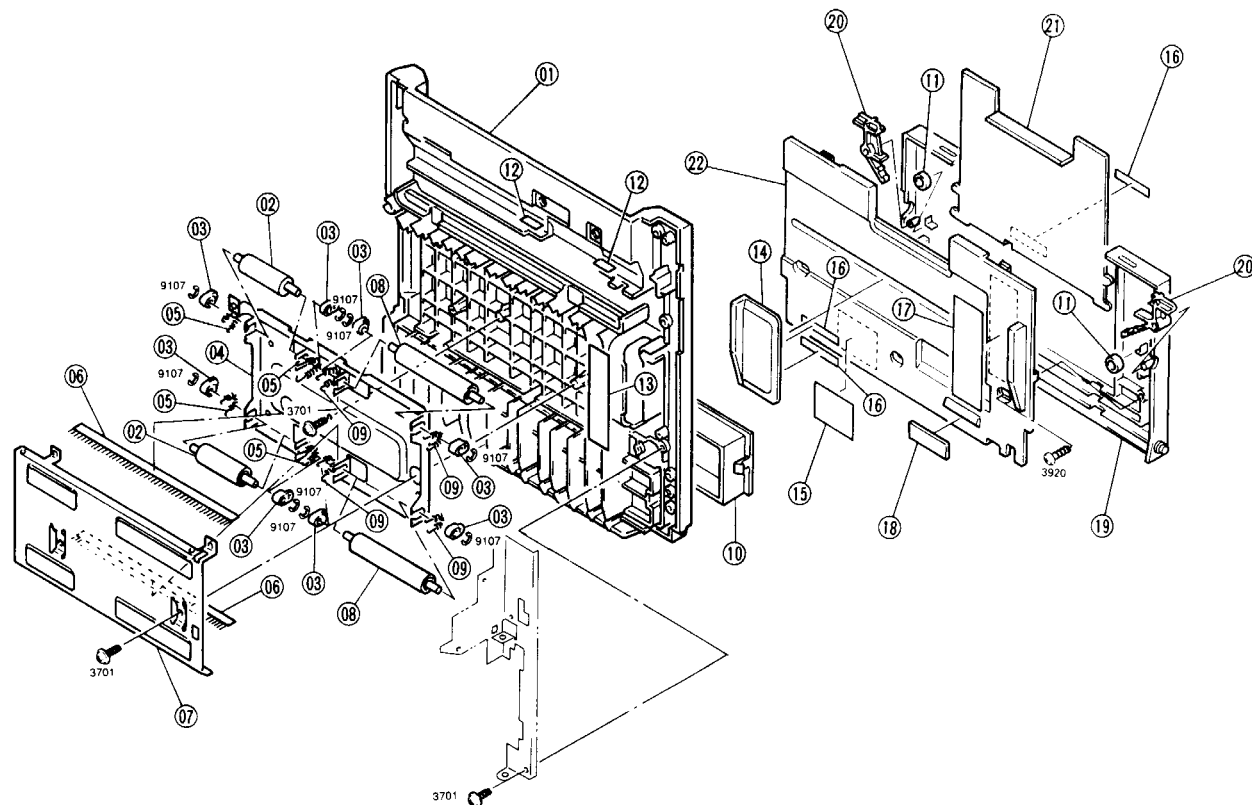
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01AA	1134-3051-02	GUIDE PLATE ガイドプレート	1			33AA	4425-3242-02	TENSION SPRING テンションスプリング	2		
02AA	1076-3109-01	GUIDE ガイド	4			*34AA	4425-3224-13	COVER カバー	2	0702	
03AA	1136-3424-01	SHAFT シャフト	1			*35AA	4425-0751-01	MOTOR モーター (M13,14)	2	0702	
04AA	1136-2513-01	SHAFT シャフト	1			*36AA	4425-3225-01	TORSION SPRING トルションスプリング	2	0702	
05AA	1136-2531-01	GEAR 72T ギア 72T	1			*37AA	4425-3227-01	RETAINING RING リテーニングリング	2	0702	
06AA	9314-1310-51	MOTOR モーター (M11,12)	2			*38AA	9335-1310-41	PHOTO INTERRUPTER フォトインタラプター	2	0702	
07AA	1136-5774-01	GEAR 26T ギア 26T	1			*39AA	4425-6806-01	HARNESSES ハーネス	2	0702	
08AA	1134-3050-01	GUIDE PLATE ガイドプレート	1			*40AA	4425-3208-01	GEAR 12T ギア 12T	2	0702	
09AA	4425-3137-02	TORSION SPRING トルションスプリング	2			41AA	4425-3021-02	HOLDER ホルダー	2		
10AA	4425-3106-01	GUIDE ガイド	2			*42AA	4425-3204-13	HOLDER ホルダー	2	0702	
11AA	4425-3115-01	SHAFT シャフト	1			43AA	4425-0152-02	ROLLER ローラー	2		
12AA	4425-0217-01	AXLE PLATE アクセルプレート	2			44AA	1134-0201-12	AXLE PLATE アクセルプレート	2		
13AA	1134-3055-02	FRAME フレーム	1			45AA	4425-3105-02	TORSION SPRING トルションスプリング	2		
14AA	4425-3135-02	SUPPORT サポート	1			46AA	1134-3052-01	GUIDE PLATE ガイドプレート	1		
15AA	4425-0216-13	AXLE PLATE アクセルプレート	2			47AA	1134-3169-01	SHAFT シャフト	1		
16AA	1134-3053-01	GUIDE ガイド	1			48AA	1134-3061-01	POLYESTER FILM ポリエステルフィルム	6		
17AA	1134-3057-01	PLATE SPRING プレートスプリング	1								
18AA	4425-3024-01	PRESSURE SPRING プレッシャースプリング	2								
19AA	4425-3023-02	BRACKET ブラケット	2								
20AA	4425-3027-01	ADJUSTING PLATE 調整プレート	2								
*21AA	4425-3210-01	SHAFT シャフト	2	0702							
*22AA	4425-3209-01	SHAFT シャフト	2	0702							
*23AA	4425-3212-01	GEAR 16/40T ギア 16/40T	2	0702							
*24AA	4425-3206-01	GEAR 18/48T ギア 18/48T	2	0702							
*25AA	4425-3205-01	GEAR 28/30T ギア 28/30T	2	0702							
*26AA	4425-3207-01	GEAR 60T ギア 60T	2	0702							
27AA	1134-3001-01	BRACKET ブラケット	2								
28AA	4425-3244-01	BRACKET ブラケット	2								
29AA	9335-1311-01	PHOTO INTERRUPTER フォトインタラプター (PC61,62)	2								
*30AA	1134-6820-02	HARNESSES ハーネス	1	0702							
*30BA	1134-6818-02	HARNESSES ハーネス	1	2704							
31AA	4425-3241-02	LEVER レバー	2								
32AA	4425-3243-01	SHOULDER SCREW ショルダーネジ	2								



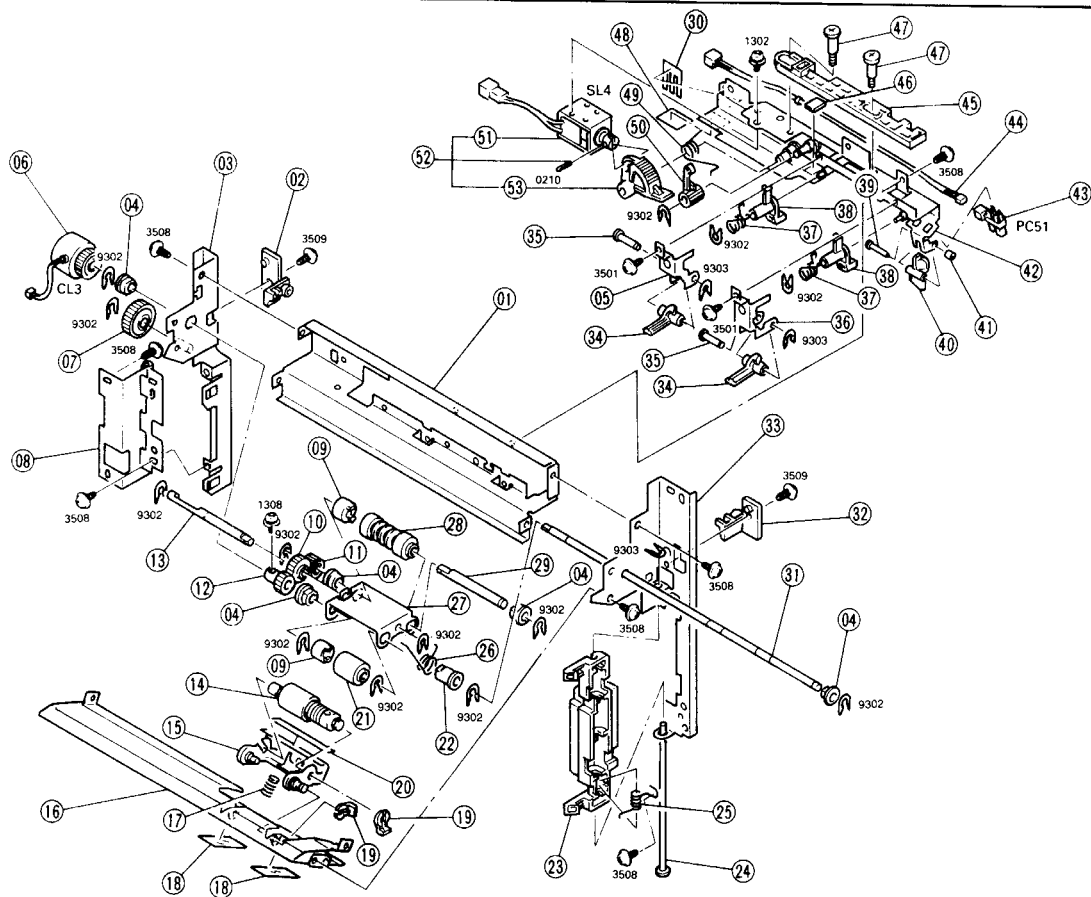
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01AA	4425-3039-01	SHAFT シャフト	4			32AA	4425-3608-01	BRACKET トリックホルン	4		
02AA	1134-3054-02	ROLLER ローラー	1			33AA	1200-2105-05	COLLAR カラー	4		
03AA	1134-3056-02	ROLLER ローラー	1			34AA	4425-3032-01	TORSION SPRING ターションスプリング	4		
04AA	1274-2611-01	BUSHING ブッシング	10			35AA	4425-3026-01	ACTUATOR アクチュエーター	2		
05AA	1065-3086-01	BUSHING ブッシング	2			36AA	1274-3603-01	BUSHING ブッシング	2		
06AA	1070-3072-01	PRESSURE SPRING プレッシャー・スプリング	2			37AA	4425-3016-01	GEAR 32T ギア 32T	2		
07AA	1052-4412-01	JOINT ジョイント	2			38AA	4425-3626-01	ACTUATOR アクチュエーター	2		
08AA	1033-4402-01	STOPPER RING ストッパーリング	12			39AA	1067-2501-01	PIN ピン	4		
09AA	4425-3043-01	SHAFT シャフト	2			40AA	4425-3017-01	SHAFT シャフト	2		
*10AA	1200-2105-05	COLLAR カラー	2	0702		41AA	4425-3010-02	HOLDER ホルダー	2		
11AA	1273-3516-01	BALL BEARING ボールベアリング	2			42AA	4425-3014-01	GEAR 46T ギア 46T	2		
12AA	4425-3004-01	SHAFT シャフト	2			43AA	4425-3011-01	ARBOR アール	2		
13AA	1134-3024-01	PULLEY 22T プーリー	2			44AA	4425-3009-01	ROLLER ローラー	2		
14AA	1134-3027-01	TIMING BELT タイミングベルト	1			45AA	4425-3015-01	COLLAR カラー	2		
15AA	1200-1566-04	WASHER ワッシャー	2			46AA	1200-5242-06	SHAFT シャフト	2		
16AA	1136-3035-01	PLY GEAR 21/28T プリーギア	1			47AA	1052-5224-01	ROLLER ローラー	2		
17AA	1134-0203-01	MOUNTING PLATE マウンティングプレート	1			48AA	4425-3012-01	ARBOR アール	2		
18AA	1300-3131-03	GEAR 24T ギア 24T	1			49AA	4425-3013-01	GEAR 30T ギア 30T	2		
19AA	4425-3038-01	GEAR 41T ギア 41T	2			50AA	4425-3019-02	TORSION SPRING ターションスプリング	2		
20AA	9335-1311-01	PHOTO INTERRUPTER (PC56,57,63-66) フォトインタラプター	6								
*21AA	1200-5212-04	PIN ピン	2	0702							
22AA	1134-0204-01	AXLE PLATE シャフトプレート	1								
23AA	1067-2513-01	PULLEY プーリー	1								
24AA	4425-3031-02	BRACKET トリックホルン	2								
25AA	4425-3045-02	TORSION SPRING ターションスプリング	2								
26AA	4425-3044-02	LEVER レバー	2								
*27AA	4425-3028-01	TORSION SPRING ターションスプリング	2	0702							
*28AA	4425-3029-02	LEVER レバー	2	0702							
*29AA	9335-1311-01	PHOTO INTERRUPTER (PC101,102) フォトインタラプター	2	0702							
*30AA	4425-6805-02	HARNESS ハーネス	2	0702							
*30BA	1134-6816-01	HARNESS ハーネス	2	2704							
*31AA	1134-6803-02	HARNESS ハーネス	1	0702							
*31BA	1134-6810-02	HARNESS ハーネス	1	2704							



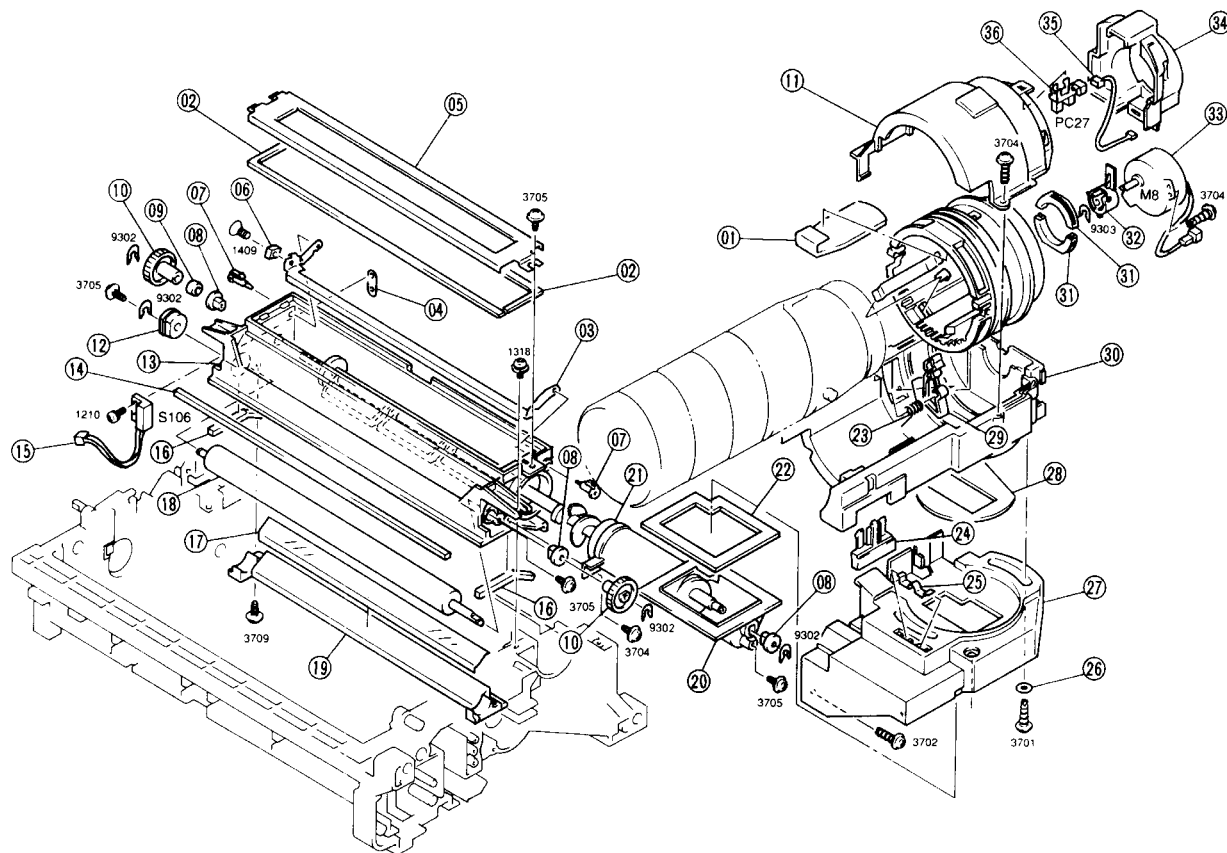
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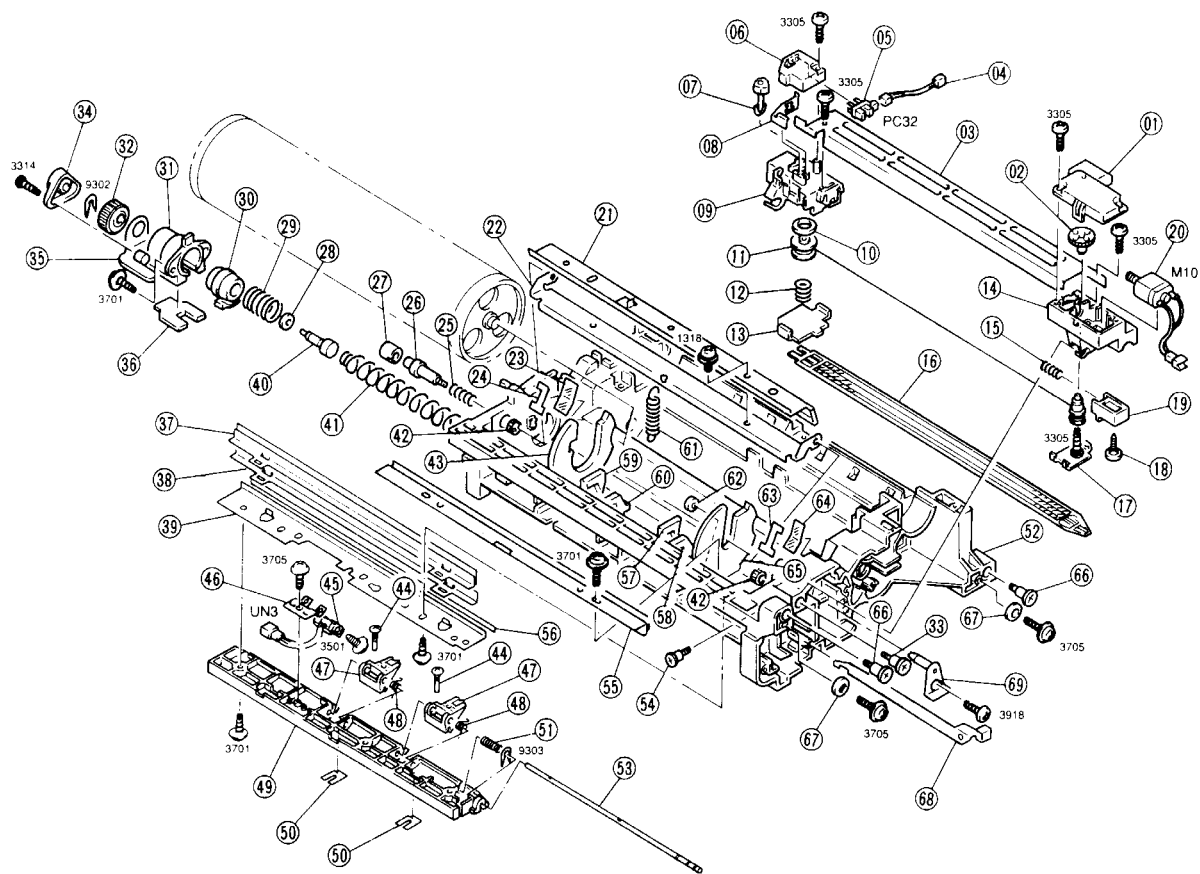
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01AA	1134-3161-02	DOOR ドア	1								
02AA	1134-3168-01	ROLLER ローラ	2								
03AA	1139-3102-01	BUSHING ブッシング	8								
04AA	1134-3163-01	FRAME フレーム	1								
05AA	1134-3167-02	TENSION SPRING テンション・スプリング	4								
06AA	4425-3133-01	NEUTRALIZING BRUSH ニュートライジング・ブラシ	2								
07AA	1134-3164-02	ESCOVER エスクバー	1								
08AA	1134-3166-01	ROLLER ローラ	2								
09AA	1134-3165-01	TENSION SPRING テンション・スプリング	4								
10AA	1134-3170-01	COVER カバー	1								
11AA	1200-2125-01	RETAINING RING リテーニング・リング	2								
12AA	1076-3122-01	POLYESTER FILM ポリエステル・フィルム	2								
*13AA	1136-3232-01	POLYESTER FILM ポリエステル・フィルム	1	2706							
14AA	1136-3434-01	GUIDE ガイド	1								
*15AA	1139-7330-01	LABEL ラベル	1	1000							
*15BA	1139-7331-01	LABEL NOTE ラベル・ノート	1	2000							
16AA	0704-5401-01	SEAL シール	3								
17AA	1136-7313-01	LABEL MANUAL FEED ラベル・マニュアル・フィード	1								
18AA	1052-5409-01	LEATHER レザー	1								
19AA	1136-3432-03	COVER カバー	1								
20AA	1139-3376-03	LOCK LEVER ロック・レバー	2								
21AA	1136-3433-13	GUIDE ガイド	1								
22AA	1136-3431-06	TABLE テーブル	1								



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01AA	1136-3403-01	MOUNTING PLATE	1			34AA	1139-3321-01	STOPPER	2		
02AA	1136-3437-03	SUPPORT	1			35AA	1139-3368-01	SHAFT	2		
03AA	1136-0217-03	REAR FRAME	1			36AA	1139-3371-02	HOLDER	1		
04AA	1274-2611-01	BUSHING	5			37AA	1139-3369-01	TORSION SPRING	2		
05AA	1139-3372-01	HOLDER	1			38AA	1139-3322-01	PAWL	2		
06AA	9322-1310-31	CLUTCH	1		(CL3)	39AA	1200-5211-05	PIN	1		
07AA	1136-5774-01	GEAR 24T	1			40AA	1139-3326-02	ACTUATOR	1		
08AA	1136-3183-03	HINGE	1			41AA	1200-2105-05	COLLAR	1		
09AA	1052-4221-01	CLUTCH	2			42AA	1139-0247-02	BRACKET	1		
10AA	1139-3318-01	GEAR 22T	1			43AA	9335-1311-01	PHOTO INTERRUPTER	1		(PC51)
11AA	1139-3367-01	GEAR 19T	1			44AA	1136-6812-01	HARNESS	1		
12AA	1139-3354-01	GEAR 17T	1			45AA	1139-3351-02	LEVER	1		
13AA	1139-3373-02	SHAFT	1			46AA	1139-3349-01	RUBBER STRIP	1		
14AA	1139-0166-02	ROLLER	1		SEPARATOR	47AA	1100-1332-14	SHOULDER SCREW	2		
15AA	1136-3416-01	HOLDER	1			48AA	1136-3158-01	POLYESTER FILM	1		
16AA	1136-3404-04	GUIDE PLATE	1			49AA	1139-3346-02	TORSION SPRING	1		
17AA	1136-3409-01	PRESSURE SPRING	1			50AA	1139-3370-01	GEAR 14T	1		
18AA	1134-3040-01	POLYESTER FILM	2			51AA	9321-2310-41	SOLENOID	1		(SL4)
19AA	1033-4402-01	STOPPER RING	2			52AA	1139-0757-01	SOLENOID ASSY	1		
20AA	1139-3374-01	POLYESTER FILM	1			53AA	1139-3348-02	SEGMENT GEAR	1		
21AA	1052-5224-01	ROLLER	1		FEED						
22AA	1065-3086-01	BUSHING	1								
23AA	1136-3176-02	LOCK RELEASE LEVER	1								
24AA	1136-3177-01	SHAFT	1								
25AA	1136-3178-02	TORSION SPRING	1								
26AA	1139-3320-01	TORSION SPRING	1								
27AA	1139-3309-01	HOLDER	1								
28AA	1139-3316-01	ROLLER	1		PAPER TAKE-UP						
29AA	1139-3317-01	SHAFT	1								
30AA	1136-3405-01	POLYESTER FILM	1								
31AA	1136-3411-01	SHAFT	1								
32AA	1136-3435-04	SUPPORT	1		FRONT						
33AA	1136-3401-03	FRONT FRAME	1								



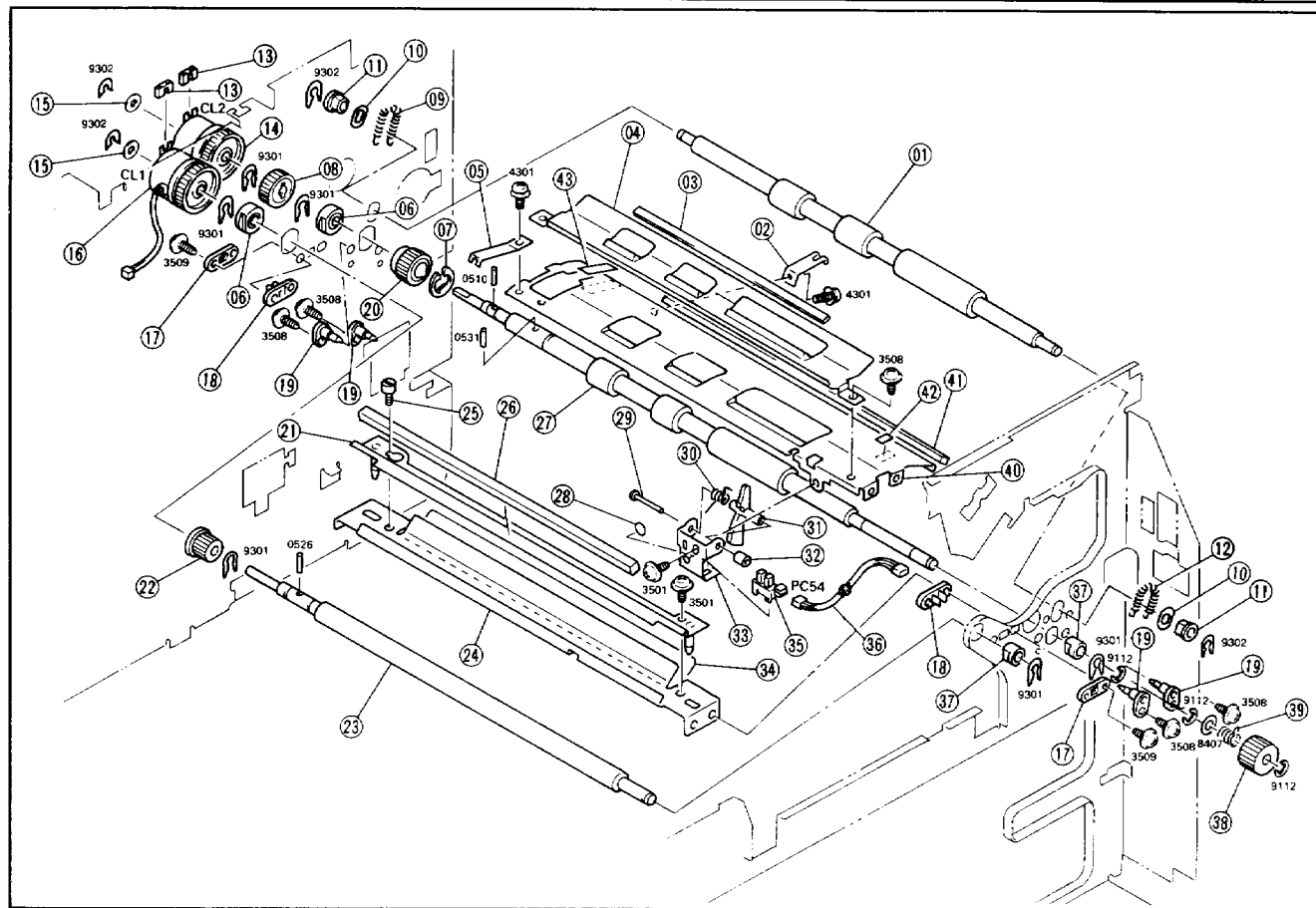


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01AA	1134-4111-01	COVER カバー	1			39AA	1136-5520-01	PLATE プレート	1		
02AA	1051-4915-01	GEAR 40T ギア	1			40AA	1136-5528-01	SHAFT シャフト	1		
03AA	1134-4106-01	HOUSING ハウジング	1			41AA	1136-5503-01	TRANSPORT COIL トランスポートコイル	1		
04AA	1139-6815-01	HARNESS ハーネス	1			42AA	1038-4512-01	BUSHING ブッシング	2		
05AA	9335-1311-01	PHOTO INTERRUPTER フォトインタラプター	1		(PC32)	43AA	1136-4202-02	SPONGE スポンジ	1		
06AA	1134-4122-02	COVER カバー	1			44AA	1100-1901-01	SHOULDER SCREW ショルダーネジ	2		
07AA	1134-4115-01	PISTON ピストン	1			45AA	9372-1310-31	AIDC UNIT AIDCユニット	1		(UN3)
08AA	1134-4120-01	PLATE SPRING プレートスプリング	1			46AA	1136-5530-01	ATDC UNIT ATDCユニット	1		
09AA	1134-4105-02	HOLDER ホルダー	1		REAR リヤ	47AA	1134-0154-01	SEPARATOR セパレーター	2		
10AA	1134-4113-02	WASHER ワッシャー	1			48AA	1136-5512-01	TORSION SPRING トルションスプリング	2		
11AA	1134-0755-01	CORONA WIRE コーロニワイヤ	1			49AA	1136-5511-02	HOLDER ホルダー	1		
12AA	1134-4114-01	PRESSURE SPRING プレッシャースプリング	1			50AA	1136-5535-01	POLYESTER FILM ポリエステルフィルム	2		
13AA	1134-4102-01	COVER カバー	1			51AA	1136-5521-01	PRESSURE SPRING プレッシャースプリング	1		
14AA	1134-4104-01	HOLDER ホルダー	1		FRONT フロント	52AA	1134-4220-14	DEVELOPING HOUSING デベロップングハウジング	1		
15AA	1400-1145-03	PRESSURE SPRING プレッシャースプリング	1			53AA	1136-5513-02	SHAFT シャフト	1		
16AA	1136-4106-01	GLID グライド	1			54AA	1100-1330-07	SHOULDER SCREW ショルダーネジ	1		
17AA	1134-4103-01	COVER カバー	1			55AA	1136-5522-01	BRACKET ブラケット	1		
18AA	1100-1341-05	SHOULDER SCREW ショルダーネジ	1			*56AA	1136-5525-01	POLYESTER FILM ポリエステルフィルム	1		0710
19AA	1038-4903-02	HOLDER ホルダー	1			57AA	1136-4209-01	SPONGE スポンジ	1		
20AA	1134-0753-01	MOTOR モーター	1		(M10)	58AA	1136-4205-01	SPONGE スポンジ	1		
21AA	1136-0901-01	CLEANING BLADE クリーニングブレード	1			59AA	1136-4210-01	SPONGE スポンジ	1		
22AA	1136-5502-01	BRACKET ブラケット	1			60AA	1136-4204-01	SPONGE スポンジ	1		
23AA	1134-5125-02	POLYESTER FILM ポリエステルフィルム	1		CLE BLADE クリーニングブレード	61AA	1136-5505-01	TENSION SPRING テンションスプリング	1		
24AA	1134-5502-01	SEAL シール	1		REAR リヤ	62AA	1036-5514-01	WASHER ワッシャー	1		
25AA	1400-1154-06	PRESSURE SPRING プレッシャースプリング	1		REAR リヤ	63AA	1134-5501-01	SEAL シール	1		FRONT フロント
26AA	1136-5510-01	SHOULDER SCREW ショルダーネジ	1			64AA	1134-5128-02	POLYESTER FILM ポリエステルフィルム	1		FRONT フロント
27AA	1036-4524-02	SLIDER スライダ	1			65AA	1136-4203-02	SPONGE スポンジ	1		
28AA	1136-5517-01	SPONGE スポンジ	1			66AA	1100-1342-08	SHOULDER SCREW ショルダーネジ	2		
29AA	1136-5532-01	PRESSURE SPRING プレッシャースプリング	1			67AA	1200-1411-01	WASHER ワッシャー	2		
30AA	1136-5509-01	SHUTTER シャッター	1			68AA	1136-5531-01	RELEASE PLATE リリースプレート	1		
31AA	1136-5508-02	HOLDER ホルダー	1			69AA	1076-0231-02	POSITIONING PLATE ポジショニングプレート	1		EP4050
32AA	1136-5506-01	GEAR 24T ギア	1			69BA	1135-0210-01	POSITIONING PLATE ポジショニングプレート	1		EP3050
33AA	1100-1333-10	SHOULDER SCREW ショルダーネジ	1								
34AA	1136-5515-01	BUSHING ブッシング	1								
35AA	1136-5523-03	POLYESTER FILM ポリエステルフィルム	1								
36AA	1136-5533-01	SPONGE スポンジ	1								
37AA	1136-5524-01	ANTISPILL PLATE アンチスピルプレート	1								
*38AA	1052-5524-01	POLYESTER FILM ポリエステルフィルム	1		OPTION オプション						

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01AA	1134-5108-01	CONVEYOR PLATE コンベヤプレート	1			34AA	1134-5102-01	BUSHING ブッシング	1		
02AA	1134-5145-02	SET PLATE セットプレート	1			35AA	1134-0752-01	BUSHING ブッシング	1		
03AA	1100-3130-08	PLATE NUT プレートナット	5			36AA	1051-3593-01	LEVER レバー	1		
04AA	1134-5135-01	BUSHING ブッシング	1			37AA	1400-2230-04	TENSION SPRING テンションスプリング	1		
05AA	1200-1442-04	WASHER ワッシャー	1			38AA	1139-5250-01	PLATE SPRING プレートスプリング	1		
06AA	1134-5114-01	GEAR 16/29T ギア 16/29T	2			39AA	1139-5249-01	SHOULDER SCREW ショルダーネジ	1		
07AA	1134-0205-12	MOUNTING PLATE マウントプレート	1			40AA	1033-4518-01	CLICK クリック	1		
08AA	1134-5113-01	GEAR 15/19T ギア 15/19T	1			41AA	1134-5101-01	MAGNET ROLLER マグネットローラー	1		
09AA	1300-3122-21	GEAR 20T ギア 20T	1			42AA	1065-5106-01	BUSHING ブッシング	2		
10AA	1200-1511-01	WASHER ワッシャー	2			43AA	1134-5140-01	TERMINAL ターミナル	1		
11AA	1134-5115-01	GEAR 35T ギア 35T	1			44AA	1300-3131-03	GEAR 24T ギア 24T	1		
12AA	1032-1606-02	BUSHING ブッシング	1			45AA	1134-5537-01	POLYESTER FILM ポリエステルフィルム	1		
13AA	1134-5136-01	GEAR 27T ギア 27T	1			46AA	1134-5112-01	GEAR 15T ギア 15T	1		
14AA	1400-1226-03	PRESSURE SPRING プレッシャースプリング	2			47AA	9312-1310-22	MOTOR モーター	1	(M9)	
15AA	1134-0751-01	BUSHING ブッシング	1			48AA	1134-0206-15	BRACKET ブラケット	1		
16AA	1139-5246-01	BALL BEARING ボールベアリング	1			49AA	1134-6804-03	HARNESSES ハーネス	1		
17AA	1200-1461-03	WASHER ワッシャー	1			50AA	1136-6052-12	ATDC UNIT ATDCユニット	1	(UN4)	
18AA	1134-5105-01	ROLL ロール	1			51AA	1500-2620-07	RETAINING RING リテーニングリング	2		
19AA	1134-5122-12	GEAR 14T ギア 14T	1			52AA	1134-5109-01	CONVEYOR PLATE コンベヤプレート	1		
20AA	1134-5120-12	BRACKET ブラケット	1			53AA	1134-5110-02	SHAFT シャフト	1		
21AA	1134-5119-04	REGULATING PLATE レギュレーティングプレート	1			54AA	1134-5155-01	SPONGE スポンジ	1		
22AA	1134-5126-01	SPONGE スポンジ	1			55AA	1134-5111-01	SPIRAL ROLLER スパイラルローラー	1		
23AA	1134-5118-01	REGULATING PLATE レギュレーティングプレート	1			56AA	1134-0754-01	COVER カバー	1		
24AA	1136-5516-03	LEVER レバー	1			57AA	1134-7313-01	LABEL STARTER ラベルスターター	1		
25AA	4427-4604-02	CUSHION クッション	1			58AA	1134-5162-01	SPONGE スポンジ	1		
26AA	1136-5526-01	RATCHET ラatchet	1			59AA	1134-5163-01	SPONGE スポンジ	1		
27AA	9321-2310-51	SOLENOID ソレノイド	1		(SL1)						
28AA	1136-0751-01	SOLENOID ASSY ソレノイドアセンブリ	1								
29AA	1136-5518-01	LEVER レバー	1								
30AA	1136-5519-01	PAWL パウル	1								
31AA	1136-0224-01	BRACKET ブラケット	1								
32AA	1400-4333-06	PLATE SPRING プレートスプリング	1								
33AA	1134-5104-01	ROLL ロール	1								

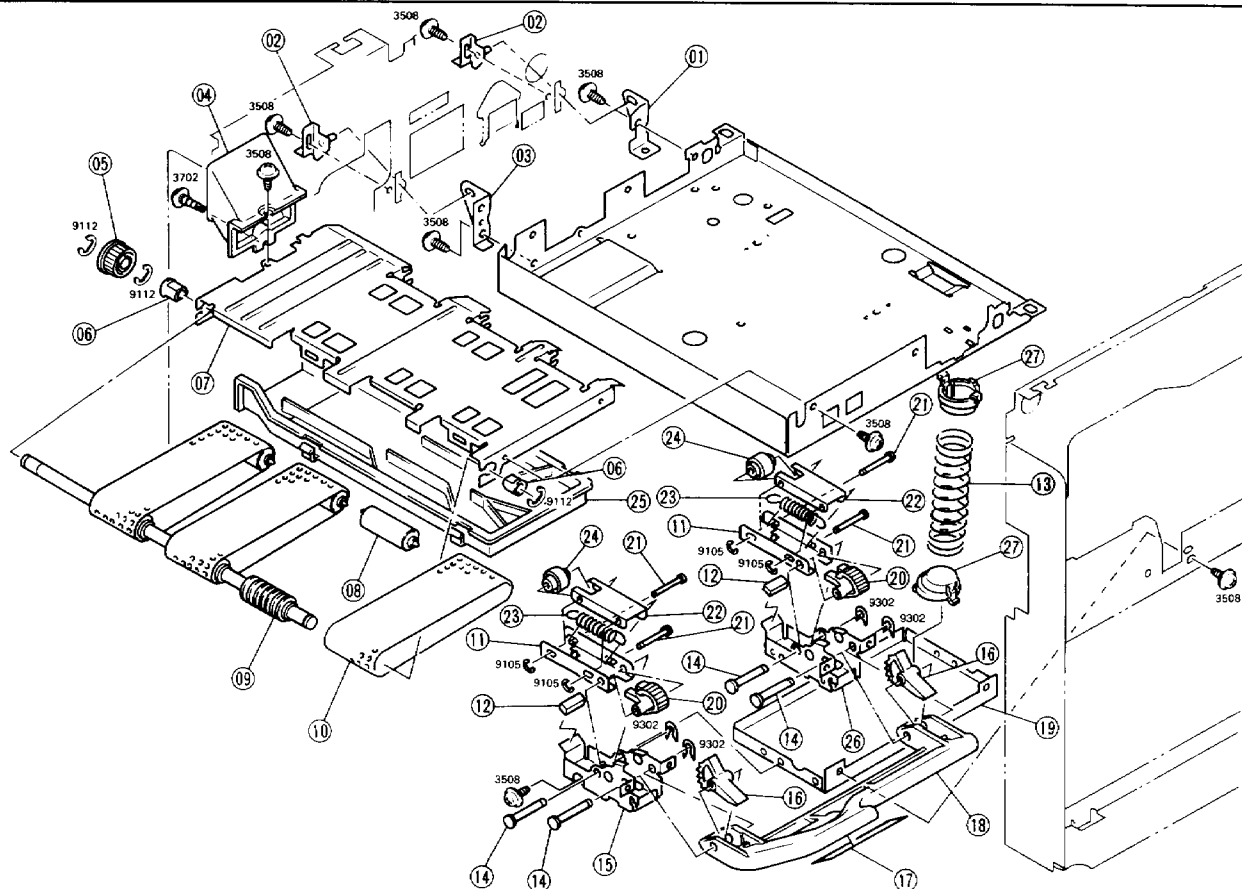


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01AA	1136-3521-01	ROLLER	1			33AA	1136-3541-02	HOLDER PHOTO INT	1		
02AA	1136-3544-01	PLATE SPRING	1			34AA	1136-3502-02	POLYESTER FILM	1		
03AA	1136-3234-01	RUBBER SEAL	1			35AA	9335-1311-01	PHOTO INTERRUPTER (PC54)	1		
04AA	1136-3531-01	GUIDE PLATE	1			36AA	1139-6815-01	HARNES	1		
05AA	1136-3545-01	PLATE SPRING	1			37AA	1200-3134-16	BUSHING	2		
06AA	1052-4461-01	BUSHING	2			38AA	1136-3530-02	KNOB	1		
07AA	1136-3451-01	STOPPER 10D	1			39AA	1136-3529-04	TORSION SPRING	1		
08AA	1136-2515-01	GEAR 23T	1			40AA	1136-3532-01	GUIDE PLATE	1		
09AA	1136-3528-01	TENSION SPRING REAR	1			41AA	1136-3235-01	SPONGE	1		
10AA	1274-3605-01	POLYESTER FILM	2			42AA	1076-3122-01	POLYESTER FILM	1		
11AA	1070-3076-01	BUSHING	2			43AA	1136-3406-01	POLYESTER FILM	1		
12AA	1136-3550-01	TENSION SPRING FRONT	1								
13AA	1134-2535-01	RUBBER STRIP	2								
14AA	9322-1310-41	CLUTCH (CL2)	1								
15AA	1200-1342-03	WASHER 0.3	2								
15BA	1200-1343-02	WASHER 0.1	2								
16AA	9322-1310-51	CLUTCH (CL1)	1								
17AA	1136-3538-01	SPACER	2								
18AA	1136-3537-01	SPACER	2								
19AA	1053-4422-01	HOLDER	4								
20AA	1136-3425-01	GEAR 22T	1								
21AA	1136-0215-01	BRACKET	1								
22AA	1136-3525-01	GEAR 15T	1								
23AA	1136-3523-02	ROLLER	1								
24AA	1134-3501-01	GUIDE PLATE	1								
25AA	1074-3308-02	SHOULDER SCREW	1								
26AA	1074-3316-01	SPONGE	1								
27AA	1136-3522-02	ROLLER TIMING	1								
28AA	1139-3147-01	SPONGE	1								
29AA	1200-5212-04	PIN	1								
30AA	1139-3131-01	TORSION SPRING	1								
31AA	1139-3127-01	ACTUATOR	1								
32AA	1200-2105-06	RETAINING RING	1								

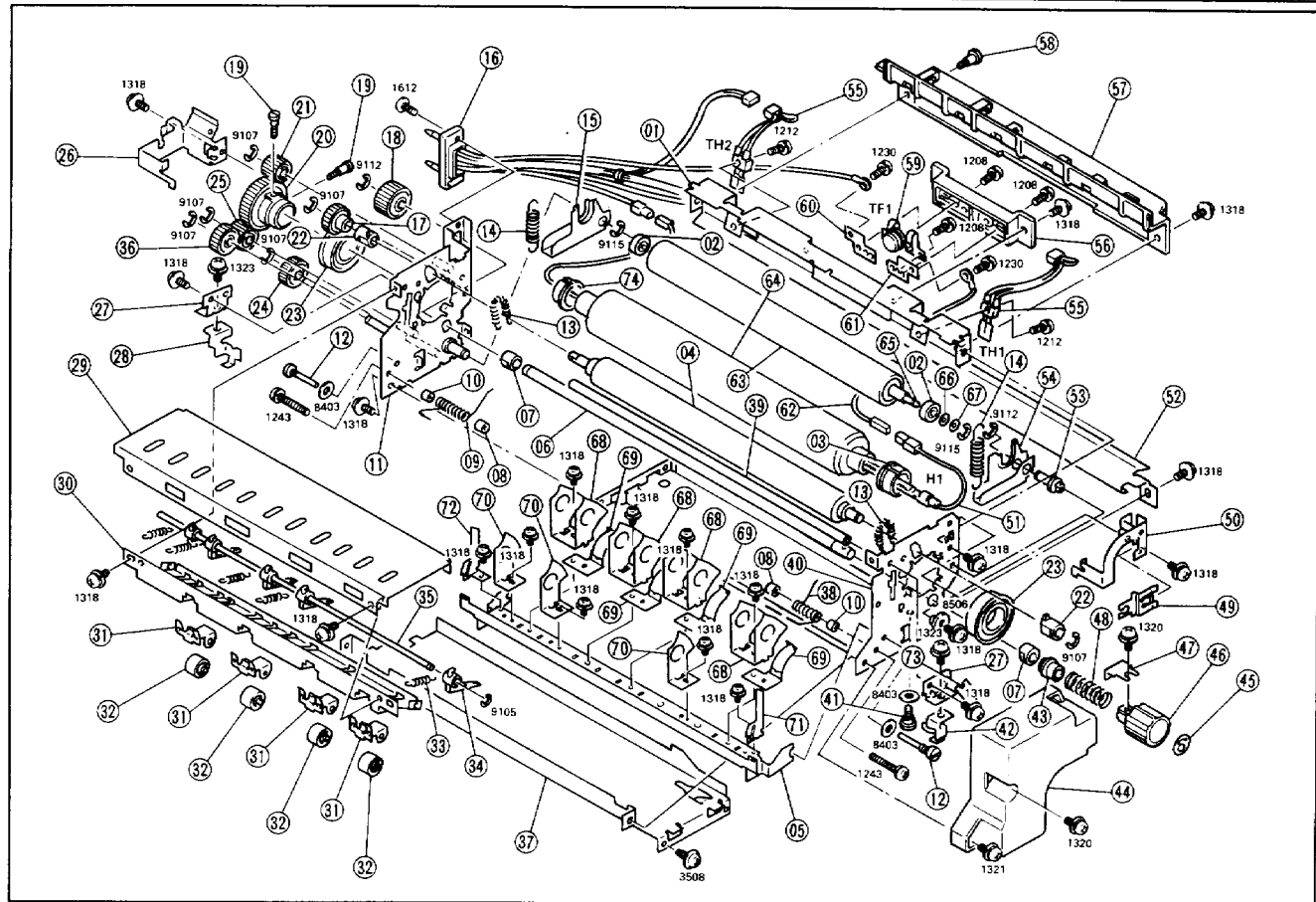
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01AA	1139-0756-01	CORONA WIRE	2			34AA	1136-0364-01	RESISTOR	1		
02AA	1400-2110-01	TENSION SPRING	2			35AA	1136-4019-01	SPONGE	3		
03AA	1036-4503-01	COVER	1			36AA	1136-4021-01	DUG	1		
04AA	1136-4004-01	GUIDE PLATE	1			37AA	1136-4020-01	SPONGE	1		
05AA	1136-4006-01	POLYESTER FILM	1			38AA	1136-3553-01	SPONGE PLATE	2		
06AA	1036-4504-01	COVER	1			39AA	1136-4012-02	SPONGE	1		
07AA	1136-4002-01	HOLDER	1			40AA	1136-3524-01	ROLLER	1		
08AA	1136-4022-01	GUIDE	1			41AA	1136-0385-01	VARIATOR	1		
09AA	1052-5501-02	POLYESTER FILM	1			42AA	1136-6823-02	HARNESSE	1		
10AA	1139-4058-02	CLEANING PAD	1			43AA	1136-6831-02	HARNESSE	1		
11AA	1139-4059-01	CLEANING PAD	1			44AA	9332-5310-21	SWITCH	2		(S3,12)
12AA	1134-4067-01	GUIDE	3			45AA	1136-4027-01	GUIDE	1		
13AA	1136-4035-01	PLATE	1			46AA	1200-1511-01	WASHER	1		
14AA	1136-4023-01	GUIDE PLATE	1			47AA	9352-6310-31	HEATER	1		(H3)
15AA	1136-4030-02	PLATE	1			48AA	1136-3539-01	SPACER	1		
16AA	1134-4068-01	GUIDE	1			49AA	9335-1311-01	PHOTO INTERRUPTER	1		(PC55)
17AA	1136-4003-02	HOUSING	1			50AA	1139-3127-01	ACTUATOR	1		
18AA	1136-4005-02	POLYESTER FILM	1			51AA	1200-2105-06	RETAINING RING	1		
19AA	1136-4029-02	SHAFT	1			52AA	1136-3541-02	HOLDER	1		
20AA	1129-7303-01	LABEL HIGH VOLTAGE	1			53AA	1136-3547-01	SPACER	1		
21AA	1136-4001-02	HOLDER	1			54AA	1139-3147-01	SPONGE	1		
22AA	1136-6841-02	HARNESSE	1			55AA	1136-6812-01	HARNESSE	1		
23AA	1136-3548-01	PLATE SPRING	1			56AA	1200-5212-04	PIN	1		
24AA	1136-3526-01	GEAR 20T	1			57AA	1139-3131-01	TENSION SPRING	1		
25AA	1136-0369-01	RESISTOR	1			58AA	1134-3504-01	POLYESTER FILM	1		
26AA	1274-3604-01	BUSHING	2			59AA	1134-3534-03	GUIDE PLATE	1		
27AA	1274-3605-01	POLYESTER FILM	2			60AA	1136-3546-01	PLATE SPRING	1		
28AA	1136-3527-01	TENSION SPRING	2			61AA	1136-3540-01	SPACER	1		
29AA	1136-4031-01	SPONGE	2			62AA	1134-3503-01	POLYESTER FILM	1		
30AA	1136-4009-01	PLATE SPRING	3								
31AA	1136-4010-01	SPACER	2								
32AA	1136-4008-01	RAIL	1								
33AA	1136-4034-01	SPONGE	2								



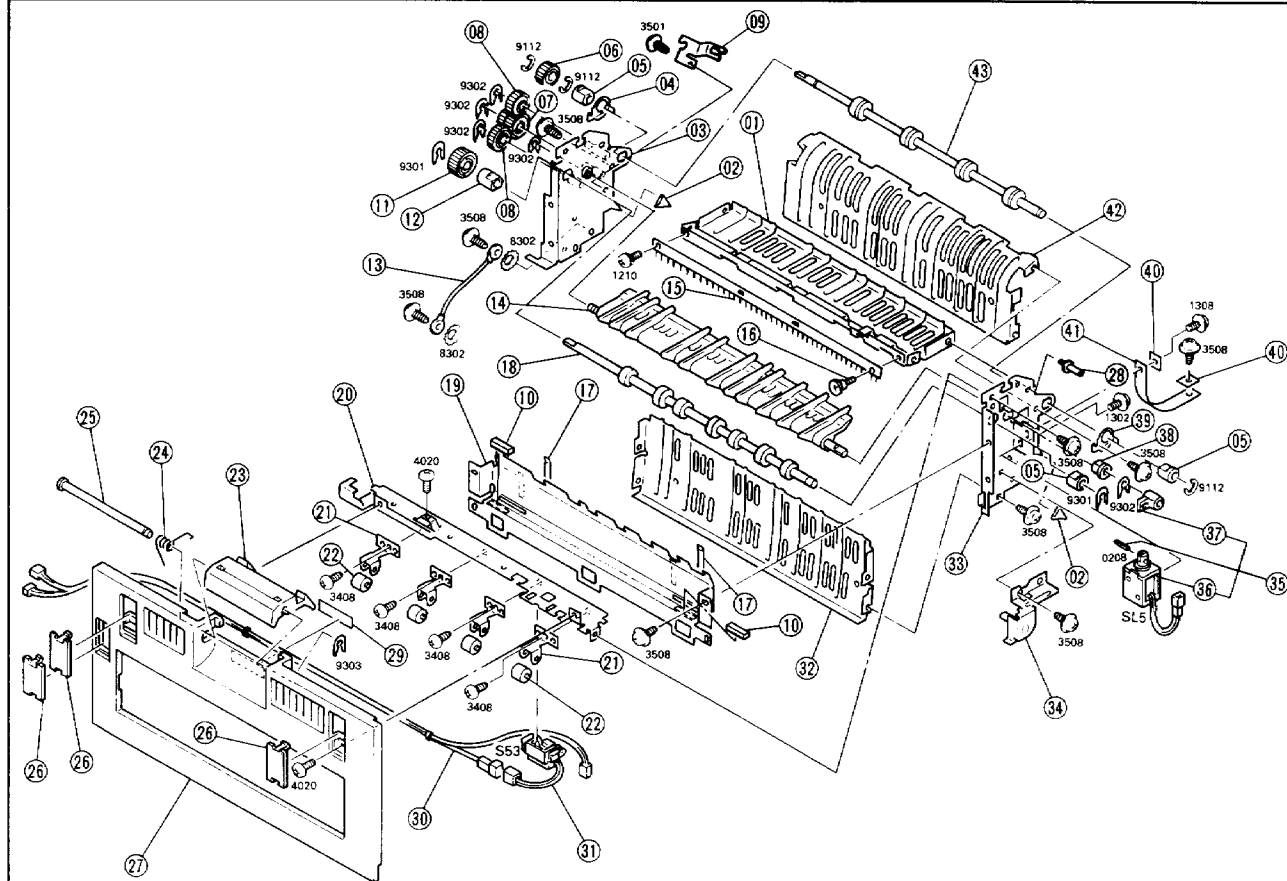
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01AA	1136-3551-01	SUPPORT PLATE RIGHT 支 持 板 右	1								
02AA	1136-0219-01	AXLE PLATE 軸 板	2								
03AA	1136-3552-02	SUPPORT PLATE LEFT 支 持 板 左	1								
04AA	1136-3605-01	DUCT ダクト	1								
05AA	1136-3607-01	GEAR 22T ギア	1								
06AA	1274-3603-01	BUSHING シムス	2								
07AA	1136-3601-01	FRAME フレーム	1								
08AA	1136-3604-01	ROLL ローラ	3								
09AA	1136-3602-01	ROLLER ローラ	1								
10AA	1136-3606-01	VACUUM BELT 真空ベルト	1set								
11AA	1136-3504-01	BRACKET ブラケット	2								
12AA	1136-3514-01	SPONGE スポンジ	2								
13AA	1136-3515-01	PRESSURE SPRING 圧縮スプリング	1								
14AA	1136-3512-01	SHAFT シャフト	4								
15AA	1136-3502-01	HOLDER ホルダ	1								
16AA	1136-3510-01	SEGMENT GEAR セグメントギア	2								
17AA	1136-7307-01	LABEL M2 ラベル	1								
18AA	1136-3509-02	LOCK RELEASE LEVER ロックリリーフレバー	1								
19AA	1136-3511-02	MOUNTING PLATE 取り付け板	1								
20AA	1136-3508-01	SEGMENT GEAR セグメントギア	2								
21AA	1200-5242-06	SHAFT シャフト	4								
22AA	1136-3505-01	LEVER レバー	2								
23AA	1136-3506-01	TENSION SPRING テンションスプリング	2								
24AA	1200-2626-03	COLLAR カラー	2								
25AA	1136-3603-02	DUCT ダクト	1								
26AA	1136-3503-01	HOLDER ホルダ	1								
27AA	1136-3516-01	HOLDER ホルダ	2								



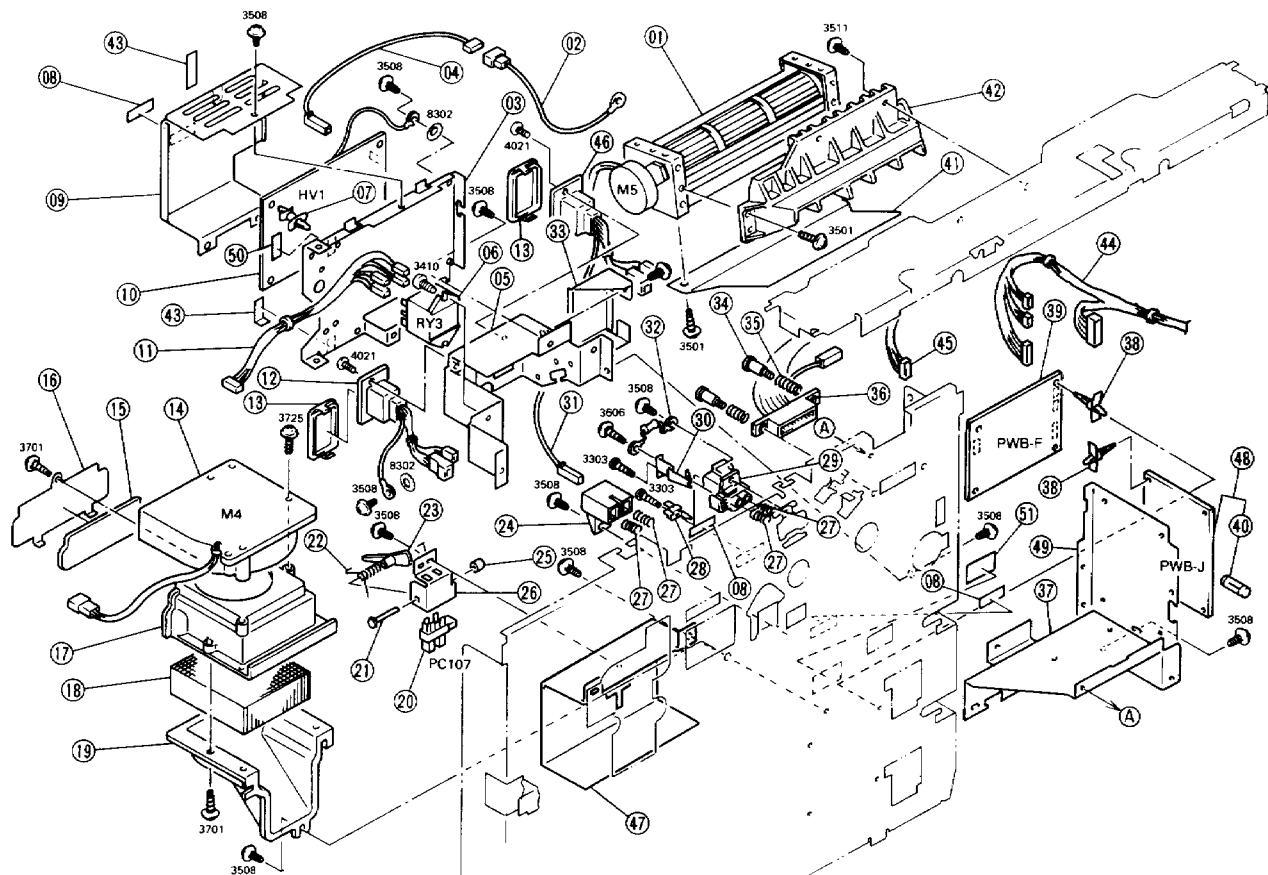
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C1AA	1136-5755-01	BRACKET ブラケット	1			40AA	1136-5751-01	FRONT FRAME フロントフレーム	1		
O2AA	1300-4394-29	BALL BEARING ボールベアリング	2			41AA	1100-1341-07	SHOULDER SCREW ショルダーネジ	1		
O3AA	1136-5813-01	BUSHING ブッシング	1			42AA	1136-5770-01	BRACKET ブラケット	1		
O4AA	1136-5782-01	CLEANING ROLLER クリーニングローラー	1			43AA	1136-5790-01	BUSHING ブッシング	1		
O5AA	1134-5794-02	GUIDE PLATE ガイドプレート	1			44AA	1136-5765-01	COVER カバー	1		
O6AA	1136-5776-01	SHAFT シャフト	1			45AA	1136-7306-01	LABEL M1 ラベル M1	1		
O7AA	1200-3134-16	BUSHING ブッシング	2			46AA	1031-4588-01	KNOB ノブ	1		
O8AA	1136-5803-01	COLLAR カラー	2			47AA	1136-5788-01	GUIDE ガイド	1		
O9AA	1134-5802-02	TORSION SPRING トルションスプリング	1			48AA	1136-5763-01	PRESSURE SPRING 圧縮スプリング	1		
10AA	1200-2226-22	COLLER カラー	2			49AA	1136-5754-01	HOLDER ホルダー	1		
11AA	1136-0216-03	REAR FRAME リアフレーム	1			50AA	1136-5766-01	BRACKET ブラケット	1		
12AA	1136-5797-02	SHOULDER SCREW ショルダーネジ	2			*51AA	9352-2310-82	TUBE LAMP チューブランプ	1		0600
13AA	1136-5784-01	TENSION SPRING テンションスプリング	2			*51BA	9352-2311-12	TUBE LAMP チューブランプ	1		2504
14AA	1134-5767-01	TENSION SPRING テンションスプリング	2			*51CA	9352-2311-22	TUBE LAMP チューブランプ	1		2550
15AA	1134-5769-01	LEVER レバー	1			*51DA	9352-2311-32	TUBE LAMP チューブランプ	1		2606
16AA	1136-6803-02	HARNES ハーネス	1			*51EA	9352-2311-42	TUBE LAMP チューブランプ	1		2612
17AA	1136-5786-01	GEAR 24T ギア 24T	1			52AA	1136-5758-02	GUIDE PLATE ガイドプレート	1		
18AA	1134-5775-01	GEAR 24T ギア 24T	1			53AA	1136-5757-01	SHAFT シャフト	1		
19AA	1136-5785-02	SHOULDER SCREW ショルダーネジ	2			54AA	1134-5768-01	LEVER レバー	1		
20AA	1136-5773-02	GEAR 42T ギア 42T	1			55AA	9372-2310-31	HERMISTOR サーミスタ	2		(TH1,2)
21AA	1066-1140-01	GEAR 20T ギア 20T	1			56AA	1136-5753-01	HOLDER ホルダー	1		
22AA	1136-5783-01	BUSHING ブッシング	2			57AA	1136-5762-02	GUIDE ガイド	1		
23AA	1300-4394-22	BALL BEARING ボールベアリング	2			58AA	1100-1330-07	SHOULDER SCREW ショルダーネジ	1		
24AA	1134-5774-01	GEAR 26T ギア 26T	1			59AA	9334-1310-11	HERMOSTAT サーモスタット	1		(TF1)
25AA	1136-5798-01	GEAR 24T ギア 24T	1			60AA	1136-5778-01	PLATE プレート	1		
26AA	1136-5764-01	HOLDER ホルダー	1			61AA	1136-5777-01	PLATE プレート	1		
27AA	1136-5772-01	SUPPORT PLATE サポートプレート	2			62AA	1136-6830-01	HARNES ハーネス	1		
28AA	1136-5771-01	BRACKET ブラケット	1			63AA	1052-1710-01	FUSING ROLLER-LWR 溶着ローラー	1		
29AA	1136-5781-02	COVER カバー	1			64AA	1076-5802-01	FUSING ROLLER-UPR 溶着ローラー	1		
30AA	1134-5793-02	GUIDE PLATE ガイドプレート	1			65AA	1134-5780-02	SHAFT シャフト	1		
31AA	1136-5806-01	HOLDER ホルダー	4			66AA	1200-1672-02	WASHER ワッシャー	1		
32AA	1038-4701-01	ROLL ローラー	4			67AA	1052-3720-01	WASHER ワッシャー	1		
33AA	1400-2230-02	TENSION SPRING テンションスプリング	5			68AA	1134-5792-02	GUIDE ガイド	4		
34AA	0966-5770-01	SEPARATOR 分離器	5			69AA	1134-0756-01	SEPARATOR 分離器	1		
35AA	1136-5796-01	SHAFT シャフト	1			70AA	1134-5808-02	GUIDE ガイド	3		
36AA	1136-5774-01	GEAR 26T ギア 26T	1			71AA	1134-5806-03	BRACKET ブラケット	1		
37AA	1136-2007-02	BASE FRAME ベースフレーム	1			72AA	1134-5807-03	BRACKET ブラケット	1		
38AA	1134-5801-02	TORSION SPRING トルションスプリング	1			73AA	1136-5812-01	SUPPORT PLATE サポートプレート	1		
39AA	1136-5800-01	SHAFT シャフト	1			74AA	1079-5523-02	BUSHING ブッシング	1		



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01AA	1136-3707-01	GUIDE PLATE ガイドプレート	1			34AA	1136-0225-01	BRACKET トリックハブ	1		
02AA	1136-5807-01	EDGE COVER エッジカバー	2			35AA	1136-0754-01	SOLENOID ASSY ソレノイドアセンブリ	1		
03AA	1136-0218-12	REAR FRAME リアフレーム	1			36AA	9321-2621-11	SOLENOID ソレノイド	1	(SL5)	
04AA	1136-5809-01	SUPPORT PLATE サポートプレート	1			37AA	1136-3723-02	LEVER レバー	1		
05AA	1274-3603-01	BUSHING ブッシング	3			38AA	1274-2611-01	BUSHING ブッシング	1		
06AA	1300-3122-44	GEAR 20T ギア 20T	1			39AA	1136-5808-01	SUPPORT PLATE サポートプレート	1	FRONT 21	
07AA	1136-3704-01	GEAR 19/24T ギア 19/24T	1			40AA	1053-3103-01	PLATE プレート	2		
08AA	1273-2515-01	GEAR 22T ギア 22T	2			41AA	1054-5101-02	BAND バンド	1		
09AA	1134-3726-01	POSITIONING PLATE ポジショニングプレート	1			42AA	1136-3711-04	GUIDE PLATE ガイドプレート	1		
10AA	1136-3715-01	SEAL シール	2			43AA	1136-5795-01	ROLLER ローラー	1		
11AA	1300-3132-12	GEAR 24T ギア 24T	1								
12AA	4425-3317-01	BUSHING ブッシング	1								
13AA	1044-6054-02	GROUND WIRE アースワイヤ	1								
14AA	1136-3709-04	GUIDE LEVER ガイドレバー	1								
15AA	1036-3702-04	NEUTRALIZING BRUSH ニュートライジングブラシ	1								
16AA	1100-1320-05	SHOULDER SCREW ショルダーネジ	1								
17AA	0704-5401-01	SEAL シール	2	2706							
18AA	1134-3705-01	ROLLER ローラー	1								
19AA	1136-3702-02	BRACKET トリックハブ	1								
20AA	1136-3708-03	BRACKET トリックハブ	1								
21AA	1136-3728-01	HOLDER ホルダー	4								
22AA	1038-4701-01	ROLL ロール	4								
23AA	1136-3720-04	ROCK RELEASE LEVER ロックリリースレバー	1								
24AA	1136-3722-03	TORSION SPRING トルションスプリング	1								
25AA	1136-3721-02	SHAFT シャフト	1								
26AA	1136-1030-01	COVER カバー	3								
27AA	1136-1007-03	COVER カバー	1								
28AA	1134-3724-01	SHOULDER SCREW ショルダーネジ	1								
29AA	0959-7312-01	LABEL CAUTION-HOT ラベル カウション・ホット	1								
30AA	1136-6811-02	HARNES ハーネス	1								
31AA	9334-2620-31	REED SWITCH リードスイッチ	1		(S53)						
32AA	1136-3712-03	GUIDE PLATE ガイドプレート	1								
33AA	1136-3713-23	FRONT FRAME フロントフレーム	1								

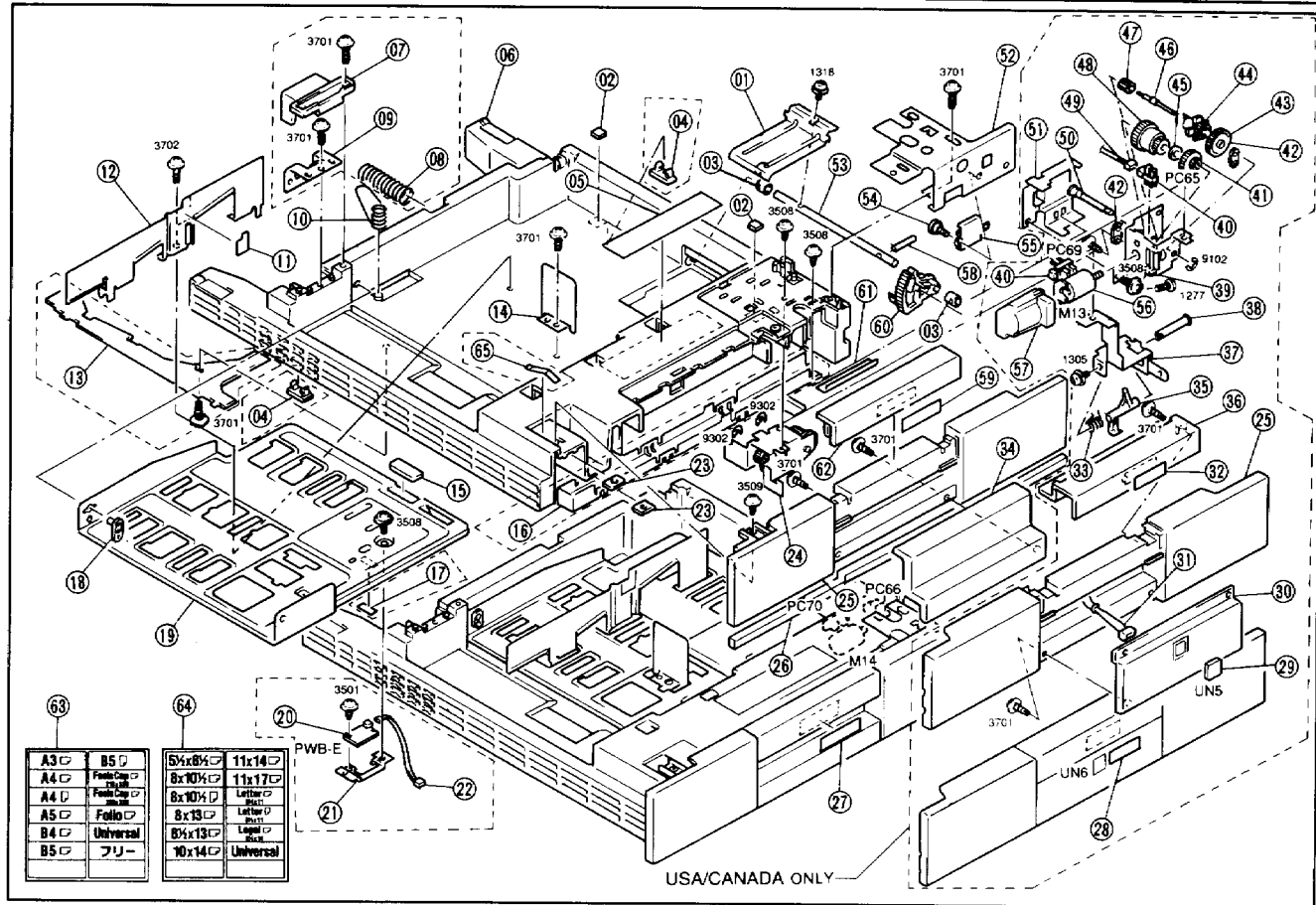


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01AA	9313-1310-52	FAN MOTOR ファンモーター	(M5)	1		30AA	1134-4119-01	GROUND PLATE アース板	1		
*02AA	1136-6833-02	HARNESS ハーネス	OPTION オプション	1	0710	*31AA	1136-6827-02	HARNESS ハーネス	1	0703	
03AA	1136-2105-02	BRACKET ブラケット	PWB-HV コッパトランス	1		*31BA	1136-6846-01	HARNESS ハーネス	1	2706	
*04AA	1136-6832-02	HARNESS ハーネス	OPTION オプション	1	0710	32AA	1136-0368-01	RESISTOR 抵抗器	1		
05AA	1136-2108-03	BRACKET ブラケット	RELAY リレー	1		33AA	1136-1028-01	COVER カバー	1		
*06AA	9341-2310-11	RELAY リレー	(RY3)	1	1000	34AA	1100-1335-03	SHOULDER SCREW ジョイント	2		
*06BA	9341-2310-11	RELAY リレー	OPTION (RY3)	1	2000	35AA	1400-1134-02	PRESSURE SPRING アジャスタブルスプリング	2		
07AA	9384-1900-57	PWB SUPPORT 9.53H コッパトランス		4		*36AA	1134-6805-02	HARNESS ハーネス	1	0703	
08AA	1129-7303-01	LABEL HIGH VOLTAGE ラベル コッパトランス		3		*36BA	1134-6821-01	HARNESS ハーネス	1	2706	
09AA	1136-2123-01	COVER カバー	PWB-HV コッパトランス	1		*36CA	1135-6801-02	HARNESS ハーネス	1	0703	
*10AA	9325-1310-32	PWB-HV(WITH IC) コッパトランス	(HV1)	1	0710	*36DA	1135-6802-01	HARNESS ハーネス	1	2706	
*10BA	9325-1310-42	PWB-HV(WITH IC) コッパトランス	(HV1)	1	2720	37AA	1134-2125-03	SUPPORT PLATE アースプレート	1		
*11AA	1136-6839-01	HARNESS ハーネス	OPTION オプション	1	1000	38AA	9384-1900-56	PWB SUPPORT 6.35H コッパトランス	8		
*11BA	1136-6839-01	HARNESS ハーネス	OPTION オプション	1	2000	39AA	1134-0106-03	PW BOARD-F(WITH IC) プリント基板 F	1		(PWB-F)
12AA	1136-6835-02	HARNESS ハーネス		1		40AA	9346-3620-41	FUSE 2A ヒューズ 2A	1		
13AA	9384-2310-41	COVER カバー		2		41AA	1136-1351-03	GUIDE PLATE ガイドプレート	1		
14AA	9313-1310-61	FAN MOTOR ファンモーター	(M4)	1		42AA	1136-1352-02	DUCT ダクト	1		
15AA	1136-4017-04	SPONGE スポンジ		1		*43AA	1136-2126-01	CONDUCTIVE TAPE 導電テープ	2	2706	
16AA	1136-4016-02	HOLDER ホルダー		1		*44AA	1134-6807-02	HARNESS ハーネス	1	2704	
17AA	1136-4015-02	DUCT ダクト		1		45AA	1134-6809-01	HARNESS ハーネス	1		
*18AA	1136-4018-01	OZONE FILTER オゾンフィルター		1	0703	46AA	1134-6813-01	HARNESS ハーネス	1		
*18BA	1136-4024-01	OZONE FILTER オゾンフィルター		1	2706	*47AA	1135-4504-01	BRACKET ブラケット	1	2713	
19AA	1136-4014-02	DUCT ダクト		1		48AA	1134-6053-02	PW BOARD-J(WITH IC) プリント基板 J	1		(PWB-J)
*20AA	9335-1311-01	PHOTO INTERRUPTER フォトインタラプター	EP3050(PC107)	1	2713	49AA	1134-2106-02	BRACKET ブラケット	1		PW BOARD-J プリント基板 J
*21AA	1200-5212-04	PIN ピン	EP3050	1	2713	*50AA	1139-2348-01	SEAL シール	1	2706	
*22AA	1070-3044-01	TORSION SPRING トルションスプリング	EP3050	1	2713	*51AA	1500-2341-07	LABEL CAUTION ラベル	1	2704	
*23AA	1136-4510-01	ACTUATOR アクチュエーター	EP3050	1	2713						
24AA	1136-4007-01	HOLDER ホルダー		1							
*25AA	1200-2105-05	COLLAR カラー	EP3050	1	2713						
*26AA	1136-4511-01	HOLDER ホルダー	EP3050	1	2713						
27AA	1400-1122-04	PRESSURE SPRING アジャスタブルスプリング		4							
28AA	1136-4113-01	TERMINAL ターミナル		1							
29AA	1136-4112-03	HOLDER ホルダー		1							


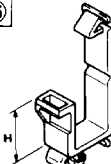
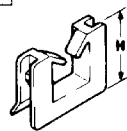

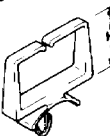

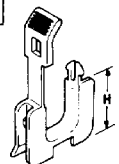
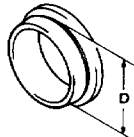


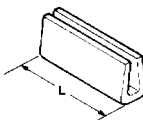
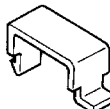

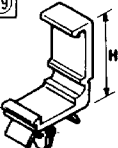
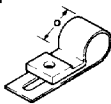
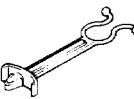
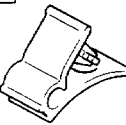
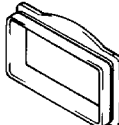
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*01AA	1136-6802-03	HARNES	1	0511		25AA	9384-1900-57	PWB SUPPORT 9.53H サポート PWB BOARD-D (ND IC)	4		
*01BA	1136-6801-03	HARNES	1	2600		26AA	1136-0120-03	BRACKET ブリケット (PWB-D)	1		
02AA	1400-1134-02	PRESSURE SPRING 圧縮スプリング	2			27AA	1136-2107-03	PW BOARD-A ブリケット PWB BOARD-A	1		
03AA	1100-1335-03	SHOULDER SCREW ショルダーネジ	2			28AA	1136-2114-03	BRACKET ブリケット	1		
04AA	9384-1900-56	PWB SUPPORT 6.35H サポート PWB BOARD-C (WITH IC)	12			*29AA	9341-2620-31	RELAY リレー (RY1)	1	0703	
05AA	1134-0103-01	PWB BOARD-C (WITH IC) ブリケット	1			*29BA	9341-2110-11	RELAY リレー (RY1)	1	2706	
06AA	9346-3310-21	FUSE 3A ヒューズ 3A	6			*30AA	1136-2126-01	CONDUCTIVE TAPE 導電テープ	1	2706	
07AA	9335-1311-01	PHOTO INTERRUPTER フォトインタラプター (PC35-41)	2			*31AA	9346-3720-51	FUSE 15A ヒューズ 15A (F1)	1	0511	
08AA	1136-0122-01	PWB BOARD (WITH IC) ブリケット	1			*32AA	1136-2120-01	BRACKET ブリケット	1	0511	
09AA	9384-2310-41	COVER カバー	2			*33AA	1136-0141-03	FUSE HOLDER ヒューズホルダー (F1, 2)	1	0511	
10AA	1136-6834-01	HARNES	1			*34AA	9346-3621-01	FUSE 10A ヒューズ 10A (F1, 2)	2	2600	
11AA	1136-2115-03	BRACKET ブリケット PHOTO INT フォトインタラプター	1			*35AA	1136-2121-01	BRACKET ブリケット	1	2600	
*12AA	9325-2310-53	PWB-PU (WITH IC) プリント基板ユニット (PU1)	1	0510		*36AA	1136-0142-03	FUSE HOLDER ヒューズホルダー	1	2600	
*12BA	9325-2310-73	PWB-PU (WITH IC) プリント基板ユニット (PU1)	1	2550		*37BA	9346-3320-32	CIRCUIT BREAKER サーキットブレーカー NORTH EUROPE (CBI, 2)	2	2706	
*12CA	9325-2310-62	PWB-PU (WITH IC) プリント基板ユニット (PU1)	1	2600		*38AA	1136-6843-01	HARNES ブリケット NORTH EUROPE	1	2706	
13AA	1136-2119-02	PLATE プレート	1			*39AA	1136-2122-01	BRACKET ブリケット NORTH EUROPE	1	2706	
14AA	9384-1900-61	PWB SUPPORT 6.35H サポート PWB BOARD-C	8			40AA	1136-6812-01	HARNES	1		
15AA	1134-2103-02	BRACKET ブリケット PWB-PU プリント基板ユニット	1			41AA	1136-6836-02	HARNES	1		
*16AA	1134-6802-03	HARNES	1	0702		42AA	9331-2310-21	MICROSWITCH マイクロスイッチ	1		
*16BA	1134-6822-01	HARNES	1	2704		43AA	1136-3716-01	BRACKET ブリケット PHOTO INT フォトインタラプター	1		
*16CA	1134-6823-01	HARNES	1	0702		44AA	1061-3046-01	TORSION SPRING トルションスプリング	1		
*16DA	1134-6825-01	HARNES	1	2704		*45AA	9343-4310-21	TRIAC MODULE トライアックモジュール (SSR1)	1	0511	
17AA	1136-2104-02	BRACKET ブリケット	1			*45BA	9343-4210-21	TRIAC MODULE トライアックモジュール (SSR1)	1	2600	
*18AA	1136-6828-01	HARNES	1	0703		*45CA	9343-4720-81	TRIAC MODULE トライアックモジュール NORTH EUROPE (SSR1)	1	2706	
*18BA	1136-6847-01	HARNES	1	2706		46AA	1053-1324-01	TAPPING SCREW タッピングネジ	2		
19AA	1136-2116-03	COVER カバー PWB-PU プリント基板ユニット	1			47AA	1136-3172-02	BRACKET ブリケット MICRO SWITCH	1		
20AA	1134-6801-01	HARNES	1			48AA	1100-1344-12	SHOULDER SCREW ショルダーネジ	1		
21AA	1134-0101-07	PWB BOARD-A (WITH IC) ブリケット PWB BOARD-A (WITH IC)	1			49AA	1136-2124-02	BRACKET ブリケット PWB BOARD-C	1		
21BA	1135-0101-02	PWB BOARD-A (WITH IC) ブリケット PWB BOARD-A	1			50AA	1136-2009-01	BRACKET ブリケット	1		
22AA	1134-6601-01	IC IC EP4050 (IC2)	1			*51AA	9325-3310-11	PWB-PU (WITH IC) プリント基板ユニット (PU2)	1	0511	
22BA	1135-6601-01	IC IC EP4050 (IC2)	1			*51BA	9325-3310-21	PWB-PU (WITH IC) プリント基板ユニット (PU2)	1	2600	
23AA	1139-0118-03	PWB BOARD-R (WITH IC) ブリケット PWB BOARD-R	1			52AA	9384-1900-58	PWB SUPPORT 12.7H サポート PWB BOARD-R	4		
24AA	1054-5461-01	SPONGE スポンジ	1			53AA	1134-2536-01	SUPPORT PLATE サポートプレート	1		



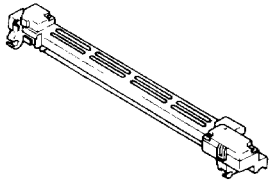
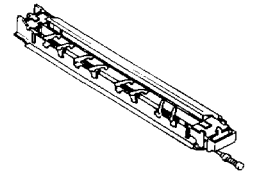
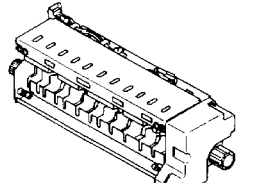
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INDEX 表示番号	PART NO. 部品番号	PART NAME 部品名称	QTY 数量	AREA 地域	REMARKS 備考	INDEX 表示番号	PART NO. 部品番号	PART NAME 部品名称	QTY 数量	AREA 地域	REMARKS 備考
01AA	4425-3201-01	BRACKET ブラケット	2			*34AA	4425-3259-01	COVER カバー	2	0702	
02AA	4425-3252-02	SPONGE スポンジ	4			*35AA	1134-3005-02	LEVER レバー	2	2704	
03AA	1200-3134-16	BUSHING シヤフツ	4			*36AA	4425-3717-03	COVER カバー	2	2704	
*04AA	1134-3032-01	SLIDER スライダ	4	2704		*37AA	1134-3018-03	BRACKET ブラケット	2	2704	
*05AA	4425-7301-01	LABEL ラベル	2	1000		*38AA	1134-3006-02	SHAF シャフト	2	2704	
*05BA	1134-7302-01	LABEL PAPER LOADING ラベル	2	2704		*39AA	1134-3003-02	HOLDER ホルダ	2	2704	
*05CA	4425-7302-01	LABEL PAPER LOADING ラベル	2	2705		*40AA	9335-1311-01	PHOTO INTERRUPTER フォトインタラプタ	4	2704	(PC65,66, 69,70)
06AA	4425-3250-04	CASSETTE BODY カセット	2			*41AA	4425-3206-01	GEAR 18/48T ギヤ	2	2704	
*07AA	1134-3019-02	COVER カバー	2	2704		*42AA	1134-3012-01	BUSHING シヤフツ	4	2704	
*08AA	1134-3011-02	PRESSURE SPRING 圧縮コイル	2	2704		*43AA	4425-3207-01	GEAR 60T ギヤ	2	2704	
*09AA	1134-3007-03	BRACKET ブラケット	2	2704		*44AA	4425-3205-01	GEAR 28/30T ギヤ	2	2704	
*10AA	4425-3258-01	PRESSURE SPRING 圧縮コイル	2	0702		*45AA	1052-3202-01	WASHER ワッシャ	2	2704	
11AA	1139-7309-01	LABEL MAX ラベル	2			*46AA	1134-3029-01	SHAFT シャフト	2	2704	
12AA	4425-3253-03	GUIDE ガイド	2			*47AA	4425-3208-01	GEAR 12T ギヤ	2	2704	
*13AA	1134-3010-02	PLATE プレート	2	2704		*48AA	4425-3212-01	GEAR 16/40T ギヤ	2	2704	
14AA	4425-3254-01	STOPPER ストッパ	2			*49AA	1134-6811-01	HARNES ハーネス	2	2704	
15AA	1052-5409-01	LEATHER レザー	2			*50AA	1134-3014-01	SHAFT シャフト	2	2704	
*16AA	1134-3008-03	COVER カバー	2	2704		*51AA	1134-3009-04	BRACKET ブラケット	2	2704	PHOTO INT フォトインタラプタ
*17AA	1134-3031-01	POLYESTER FILM ポリエステルフィルム	2	2704		52AA	4425-3255-03	BRACKET ブラケット	2		
18AA	1274-3103-02	HOLD PLATE ホルダプレート	2			53AA	4425-3202-01	SHAFT シャフト	2		
19AA	4425-3251-02	LIFTING PLATE リフティングプレート	2			*54AA	1100-1321-13	SHOULDER SCREW ショルダーネジ	4	0702	
*20AA	1134-0108-02	PW BOARD-E(NO IC) プリント基板 E	2	2704	(PWB-E)	*55AA	4425-3249-02	MAGNET CATCH マグネットキャッチ	2	0702	
*21AA	1134-3020-03	BRACKET ブラケット	2	2704		*56AA	4425-0751-01	MOTOR モータ	2	2704	(M13,14)
*22AA	1134-6819-01	HARNES ハーネス	2	2704		*57AA	1134-3015-03	COVER カバー	2	2704	MOTOR モータ
23AA	1139-3153-01	PLATE NUT プレートナット	4			58AA	4425-3213-01	PIN ピン	2		
*24AA	4425-0219-02	GEAR ASSY ギヤアセンブリ	2	0702		*59AA	1139-7304-01	LABEL A4 Y ラベル	1	0400	
25AA	4425-3256-03	CASSETTE COVER カセットカバー	2			*59BA	1139-7314-01	LABEL LETTER Y ラベル	1	2303	
*26AA	1136-2033-01	SPONGE スポンジ	2	2706		60AA	4425-3203-03	SEGMENT GEAR セグメントギヤ	2		
*27AA	1139-7303-01	LABEL A4 ラベル	1	1000		61AA	4425-3260-01	PLATE プレート	2		
*27BA	4425-7309-01	LABEL LEGAL ラベル	1	2300		*62AA	1139-3151-13	COVER カバー	2	0702	
*27CA	4425-7307-01	LABEL A3T ラベル	1	2410		*63AA	1139-7345-01	LABEL PAPER SIZE ラベル紙サイズ	1	0400	OPTION オプション
*27DA	1136-7302-01	LABEL FOLIO ラベル	1	2765		*64AA	1139-7346-01	LABEL PAPER SIZE ラベル紙サイズ	1	2300	OPTION オプション
*28AA	4425-7309-01	LABEL LEGAL ラベル	1	2704		*65AA	1134-3063-01	POLYESTER FILM ポリエステルフィルム	1	2704	
*29AA	4425-6051-02	SWITCH スイッチ	2	2704	(UNS,6)						
*30AA	4425-3719-04	COVER カバー	2	2704							
*31AA	1134-6815-01	HARNES ハーネス	2	2704							
*32AA	4425-7308-01	LABEL LETTER ラベル	1	2704							
*33AA	1134-3004-02	TORSION SPRING トルションコイル	2	2704							

<p>01</p> 	<p>06</p> 	<p>11</p> 	<p>16</p> 				
<p>02</p> 	<p>07</p> 	<p>12</p> 	<p>17</p> 				
<p>03</p> 	<p>08</p> 	<p>13</p> 	<p>18</p> 				
<p>04</p> 	<p>09</p> 	<p>14</p> 					
<p>05</p> 	<p>10</p> 	<p>15</p> 					
























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INDEX 表示番号	PART NO. 部 品 番 号	PART NAME 部 品 名 称	QTY 員数	AREA 地 域	REMARKS 備 考	INDEX 表示番号	PART NO. 部 品 番 号	PART NAME 部 品 名 称	QTY 員数	AREA 地 域	REMARKS 備 考
01AA	9384-1900-64	WIRING SADDLE 13.0H	2								
01BA	9384-1900-65	WIRING SADDLE 18.0H	6								
01CA	9384-1120-41	WIRING SADDLE 19.0H	2								
02AA	9384-1310-81	WIRING SADDLE 6.4H	5								
03AA	9384-1720-41	WIRING SADDLE	3								
04AA	1050-4805-01	EDGE COVER	1								
05AA	9384-1310-51	WIRING SADDLE	3								
05BA	9384-1820-61	LEAD CLAMPER	1								
06AA	9384-1921-11	WIRING SADDLE 9.2H	13								
06BA	9384-1921-21	WIRING SADDLE 36.1H	8								
07AA	9384-1110-61	WIRING SADDLE 21.5H	6								
07BA	9384-1310-11	WIRING SADDLE 5.2H	13								
07CA	9384-1310-41	WIRING SADDLE 14.2H	3								
08AA	9384-1900-53	WIRING SADDLE 18.7H	25								
09AA	9384-1900-54	WIRING SADDLE 23.0H	24								
10AA	9384-1310-71	WIRING SADDLE 18.9H	4								
11AA	9384-2010-21	EDGE COVER 8.5H	20								
11BA	9384-2800-36	EDGE COVER 15H	2								
12AA	9384-2010-31	EDGE COVER 15.4H	14								
12BA	9384-2010-41	EDGE COVER 25.0H	2								
13AA	9384-2920-91	EDGE COVER 14L	2								
13BA	1136-2019-01	EDGE COVER	1								
13CA	9384-2620-31	EDGE COVER 12L	1								
14AA	9384-1600-04	P-CLIP 5D	1								
15AA	0722-4913-01	COLLAR	6								
16AA	1031-4403-01	GROMMET	1								
17AA	0721-4203-12	COLLAR	3								
18AA	1065-5872-01	CORD CLAMP	6								

<p>01</p>  <p>FIG. 14</p>			
<p>02</p>  <p>FIG. 17</p>			
<p>03</p>  <p>FIG. 19</p>			

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INDEX 表示番号	PART NO. 部 品 番 号	PART NAME 部 品 名 称	QTY 員数	AREA 地 域	REMARKS 備 考	COMPOSITION 構 成 部 品
01AA	1134-0313-01	DRUM CHARGE CORONA	1			Fig. 14 ㉑ ~ ㉒ Fig. 17 ㉑ ~ ㉒ Fig. 19 ㉑ ~ ㉒, ㉓ ~ ㉔, ㉕ ~ ㉖ ※ This unit does not include the parts indexed ㉑ and ㉒ as illustrated in Fig. 19. Fig. 19 の INDEX ㉑, ㉒ はこのユニットの構成部品には含まれていません。
02AA	1136-0351-01	TRANS/SEP. CORONA	1			
03AA	1134-0318-01	FUSING UNIT フイティング	1			

INDEX 表示番号	PART NO. 部品番号	PART NAME 部品名称	ILLUST 図	INDEX 表示番号	PART NO. 部品番号	PART NAME 部品名称	ILLUST 図	INDEX 表示番号	PART NO. 部品番号	PART NAME 部品名称	ILLUST 図
0203	9754-2010-08	SPRING ROLL PIN スプリングローラーピン		2802	9658-0306-13	SCREW ナット		3918	9742-0408-13	TAPPING SCREW タッピングナット	
0208	9754-3010-08							3920	9742-0408-14		
0210	9754-3012-08										
0510	9752-3014-50	PIN ピン		3105	9656-0310-13	TAPPING SCREW タッピングナット		4005	9743-0408-13	TAPPING SCREW タッピングナット	
0526	9752-2016-50			3211	9657-0314-07	TAPPING SCREW タッピングナット		4009	9743-0308-01		
0531	9752-3018-50							4012	9743-0306-13		
								4020	9743-0408-14		
								4021	9743-0308-14		
1124	9642-0408-21	SCREW ナット		3303	9732-0306-13	TAPPING SCREW タッピングナット		4301	9770-0306-13	TAPPING SCREW タッピングナット	
1208	9644-0306-13	SCREW ナット		3305	9732-0308-13			4305	9770-0408-13		
1210	9644-0308-13			3307	9732-0316-13						
1212	9644-0310-13			3314	9732-0312-13			4401	9771-0414-14	SET SCREW ナット	
1230	9644-0408-13			3402	9733-0306-13	TAPPING SCREW タッピングナット		7104	9684-0308-08	SET SCREW ナット	
1243	9644-0435-13			3403	9733-0308-13			7105	9684-0404-08		
1277	9644-2606-13			3408	9733-0406-13			7114	9684-0312-08		
				3410	9733-0408-13			7124	9684-0310-08		
1302	9646-0305-13	SCREW ナット		3501	9735-0306-13	TAPPING SCREW タッピングナット		8301	9712-0300-13	WASHER ワッシャー	
1305	9646-0306-13			3504	9735-0308-13			8302	9712-0400-13		
1308	9646-0308-13			3506	9735-0406-13						
1309	9646-0310-13			3508	9735-0408-13			8403	9715-0400-01	WASHER ワッシャー	
1312	9646-0316-13			3509	9735-0410-13			8407	9715-0800-01		
1315	9646-0406-13			3510	9735-0412-13			8506	9716-0400-01		
1318	9646-0408-13			3511	9735-0414-13						
1320	9646-0410-13			3517	9735-0305-13						
1321	9646-0412-13			3527	9735-0412-07						
1322	9646-0414-13										
1323	9646-0416-13										
1360	9646-0306-21										
1409	9648-0308-21	SCREW ナット		3606	9738-0306-13	TAPPING SCREW タッピングナット		9102	9721-0200-01	RETAINING RING リリング	
1460	9648-0306-21							9105	9721-0300-01		
				3701	9739-0408-13	TAPPING SCREW タッピングナット		9107	9721-0400-01		
1607	9654-0306-13	SCREW ナット		3702	9739-0410-13			9112	9721-0600-01		
1610	9654-0308-03			3703	9739-0412-13			9115	9721-0800-01		
1612	9654-0310-01			3704	9739-0308-13						
1634	9654-0304-13			3705	9739-0306-13			9301	1066-1151-01	RETAINING RING リリング	
2704	9654-0412-14			3709	9739-0310-13			9302	4425-3001-01		
				3725	9739-0440-13			9303	4425-3002-01		

PART NO.	FIG.	INDEX	QTY	PART NO.	FIG.	INDEX	QTY	PART NO.	FIG.	INDEX	QTY	PART NO.	FIG.	INDEX	QTY
部 品 番 号	図番	表示番号	数量	部 品 番 号	図番	表示番号	数量	部 品 番 号	図番	表示番号	数量	部 品 番 号	図番	表示番号	数量
0704-4127-01	04	17AA	1	1055-1855-02	07	42AA	1	1134-0154-01	14	47AA	2	1134-3056-02	03	03AA	1
0704-5401-01	04	16AA	1	1055-1855-01	08	02AA	1	1134-0201-12	09	44AA	2	1134-3057-01	10	17AA	1
0704-5401-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	28AA	1
0721-4201-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	18AA	1
0721-4201-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	48AA	1
0959-7311-01	04	29AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	27AA	1
0966-5770-01	04	34AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	48AA	1
1001-4201-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	27AA	1
1001-4201-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	48AA	1
1001-4201-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	27AA	1
1001-4201-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	48AA	1
1001-4201-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	27AA	1
1001-4201-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	48AA	1
1001-4201-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	27AA	1
1001-4201-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	48AA	1
1001-4201-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	27AA	1
1001-4201-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	48AA	1
1001-4201-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	27AA	1
1001-4201-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	48AA	1
1001-4201-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	27AA	1
1001-4201-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	48AA	1
1001-4201-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	27AA	1
1001-4201-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	48AA	1
1001-4201-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	27AA	1
1001-4201-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	48AA	1
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1001-4201-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	27AA	1
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1001-4201-01	04	17AA	1	1055-1855-01	10	05AA	1	1134-0201-01	10	47AA	1	1134-3057-01	12	27AA	1
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PART NO 部 品 番 号	FIG 図 番	INDEX 表示番号	QTY 数量	PART NO 部 品 番 号	FIG 図 番	INDEX 表示番号	QTY 数量	PART NO 部 品 番 号	FIG 図 番	INDEX 表示番号	QTY 数量	PART NO 部 品 番 号	FIG 図 番	INDEX 表示番号	QTY 数量
1134-533-0000-01		17AA	1	1134-7304-01	02	41BA	1	1136-1041-03	02	37CA	1	1136-2019-02	02	12BA	1
1134-533-0000-02		02AA	1	1134-7305-01	02	41CA	1	1136-1315-01	02	38AA	1	1136-2020-02	02	13AA	1
1134-533-0000-03		15AA	1	1134-7306-01	02	42AA	1	1136-1316-01	02	39AA	1	1136-2021-01	01	02AA	1
1134-533-0000-04		43AA	1	1134-7310-02	02	00AA	1	1136-1317-01	02	22AA	1	1136-2022-01	01	10AA	1
1134-533-0000-05		02AA	1	1134-7311-02	02	43CA	1	1136-1318-02	02	40AA	1	1136-2023-01	01	03AA	1
1134-533-0000-06		15AA	1	1134-7312-01	01	57AA	1	1136-1319-01	02	31AA	1	1136-2024-01	01	05AA	1
1134-533-0000-07		12AA	1	1134-7313-01	01	11BA	1	1136-1320-01	02	17AA	1	1136-2025-01	01	12AA	1
1134-533-0000-08		02AA	1	1134-7314-01	01	12BA	1	1136-1321-01	02	13AA	1	1136-2026-01	01	13AA	1
1134-533-0000-09		20AA	1	1134-7315-01	01	13BA	1	1136-1322-01	02	11AA	1	1136-2027-01	01	14AA	1
1134-533-0000-10		20AA	1	1134-7316-01	01	14BA	1	1136-1323-01	02	15AA	1	1136-2028-01	01	15AA	1
1134-533-0000-11		21AA	1	1134-7317-01	01	15BA	1	1136-1324-01	02	16AA	1	1136-2029-01	01	16AA	1
1134-533-0000-12		07AA	1	1134-7318-01	01	16BA	1	1136-1325-01	02	17AA	1	1136-2030-01	01	17AA	1
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1134-533-0000-17		15AA	1	1134-7323-01	01	21BA	1	1136-1330-01	02	22AA	1	1136-2035-01	01	22AA	1
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1134-533-0000-21		12AA	1	1134-7327-01	01	25BA	1	1136-1334-01	02	26AA	1	1136-2039-01	01	26AA	1
1134-533-0000-22		12AA	1	1134-7328-01	01	26BA	1	1136-1335-01	02	27AA	1	1136-2040-01	01	27AA	1
1134-533-0000-23		12AA	1	1134-7329-01	01	27BA	1	1136-1336-01	02	28AA	1	1136-2041-01	01	28AA	1
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1134-533-0000-26		12AA	1	1134-7332-01	01	30BA	1	1136-1339-01	02	31AA	1	1136-2044-01	01	31AA	1
1134-533-0000-27		12AA	1	1134-7333-01	01	31BA	1	1136-1340-01	02	32AA	1	1136-2045-01	01	32AA	1
1134-533-0000-28		12AA	1	1134-7334-01	01	32BA	1	1136-1341-01	02	33AA	1	1136-2046-01	01	33AA	1
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1134-533-0000-35		12AA	1	1134-7341-01	01	39BA	1	1136-1348-01	02	40AA	1	1136-2053-01	01	40AA	1
1134-533-0000-36		12AA	1	1134-7342-01	01	40BA	1	1136-1349-01	02	41AA	1	1136-2054-01	01	41AA	1
1134-533-0000-37		12AA	1	1134-7343-01	01	41BA	1	1136-1350-01	02	42AA	1	1136-2055-01	01	42AA	1
1134-533-0000-38		12AA	1	1134-7344-01	01	42BA	1	1136-1351-01	02	43AA	1	1136-2056-01	01	43AA	1
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1134-533-0000-40		12AA	1	1134-7346-01	01	44BA	1	1136-1353-01	02	45AA	1	1136-2058-01	01	45AA	1
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1134-533-0000-44		12AA	1	1134-7350-01	01	48BA	1	1136-1357-01	02	49AA	1	1136-2062-01	01	49AA	1
1134-533-0000-45		12AA	1	1134-7351-01	01	49BA	1	1136-1358-01	02	50AA	1	1136-2063-01	01	50AA	1
1134-533-0000-46		12AA	1	1134-7352-01	01	50BA	1	1136-1359-01	02	51AA	1	1136-2064-01	01	51AA	1
1134-533-0000-47		12AA	1	1134-7353-01	01	51BA	1	1136-1360-01	02	52AA	1	1136-2065-01	01	52AA	1
1134-533-0000-48		12AA	1	1134-7354-01	01	52BA	1	1136-1361-01	02	53AA	1	1136-2066-01	01	53AA	1
1134-533-0000-49		12AA	1	1134-7355-01	01	53BA	1	1136-1362-01	02	54AA	1	1136-2067-01	01	54AA	1
1134-533-0000-50		12AA	1	1134-7356-01	01	54BA	1	1136-1363-01	02	55AA	1	1136-2068-01	01	55AA	1
1134-533-0000-51		12AA	1	1134-7357-01	01	55BA	1	1136-1364-01	02	56AA	1	1136-2069-01	01	56AA	1
1134-533-0000-52		12AA	1	1134-7358-01	01	56BA	1	1136-1365-01	02	57AA	1	1136-2070-01	01	57AA	1
1134-533-0000-53		12AA	1	1134-7359-01	01	57BA	1	1136-1366-01	02	58AA	1	1136-2071-01	01	58AA	1
1134-533-0000-54		12AA	1	1134-7360-01	01	58BA	1	1136-1367-01	02	59AA	1	1136-2072-01	01	59AA	1
1134-533-0000-55		12AA	1	1134-7361-01	01	59BA	1	1136-1368-01	02	60AA	1	1136-2073-01	01	60AA	1
1134-533-0000-56		12AA	1	1134-7362-01	01	60BA	1	1136-1369-01	02	61AA	1	1136-2074-01	01	61AA	1
1134-533-0000-57		12AA	1	1134-7363-01	01	61BA	1	1136-1370-01	02	62AA	1	1136-2075-01	01	62AA	1
1134-533-0000-58		12AA	1	1134-7364-01	01	62BA	1	1136-1371-01	02	63AA	1	1136-2076-01	01	63AA	1
1134-533-0000-59		12AA	1	1134-7365-01	01	63BA	1	1136-1372-01	02	64AA	1	1136-2077-01	01	64AA	1
1134-533-0000-60		12AA	1	1134-7366-01	01	64BA	1	1136-1373-01	02	65AA	1	1136-2078-01	01	65AA	1
1134-533-0000-61		12AA	1	1134-7367-01	01	65BA	1	1136-1374-01	02	66AA	1	1136-2079-01	01	66AA	1
1134-533-0000-62		12AA	1	1134-7368-01	01	66BA	1	1136-1375-01	02	67AA	1	1136-2080-01	01	67AA	1
1134-533-0000-63		12AA	1	1134-7369-01	01	67BA	1	1136-1376-01	02	68AA	1	1136-2081-01	01	68AA	1
1134-533-0000-64		12AA	1	1134-7370-01	01	68BA	1	1136-1377-01	02	69AA	1	1136-2082-01	01	69AA	1
1134-533-0000-65		12AA	1	1134-7371-01	01	69BA	1	1136-1378-01	02	70AA	1	1136-2083-01	01	70AA	1
1134-533-0000-66		12AA	1	1134-7372-01	01	70BA	1	1136-1379-01	02	71AA	1	1136-2084-01	01	71AA	1
1134-533-0000-67		12AA	1	1134-7373-01	01	71BA	1	1136-1380-01	02	72AA	1	1136-2085-01	01	72AA	1
1134-533-0000-68		12AA	1	1134-7374-01	01	72BA	1	1136-1381-01	02	73AA	1	1136-2086-01	01	73AA	1
1134-533-0000-69		12AA	1	1134-7375-01	01	73BA	1	1136-1382-01	02	74AA	1	1136-2087-01	01	74AA	1
1134-533-0000-70		12AA	1	1134-7376-01	01	74BA	1	1136-1383-01	02	75AA	1	1136-2088-01	01	75AA	1
1134-533-0000-71		12AA	1	1134-7377-01	01	75BA	1	1136-1384-01	02	76AA	1	1136-2089-01	01	76AA	1
1134-533-0000-72		12AA	1	1134-7378-01	01	76BA	1	1136-1385-01	02	77AA	1	1136-2090-01	01	77AA	1
1134-533-0000-73		12AA	1	1134-7379-01	01	77BA	1	1136-1386-01	02	78AA	1	1136-2091-01	01	78AA	1
1134-533-0000-74		12AA	1	1134-7380-01	01	78BA	1	1136-1387-01	02	79AA	1	1136-2092-01	01	79AA	1
1134-533-0000-75		12AA	1	1134-7381-01	01	79BA	1	1136-1388-01	02	80AA	1	1136-2093-01	01	80AA	1
1134-533-0000-76		12AA	1	1134-7382-01	01	80BA	1	1136-1389-01	02						

PART NO.			FIG.	INDEX	QTY	PART NO.			FIG.	INDEX	QTY	PART NO.			FIG.	INDEX	QTY
部 品 番 号			図番	表示番号	数量	部 品 番 号			図番	表示番号	数量	部 品 番 号			図番	表示番号	数量
9325	2310	5	22	12AA	1	9384	1110	61	24	07AA	6						
9325	2310	5	22	12CA	1	9384	1110	21	07	21AA	1						
9325	2310	5	22	12BA	1	9384	1120	21	07	01CA	1						
9325	2310	5	22	12AA	1	9384	1120	41	04	30AA	1						
9325	2310	5	22	51BA	1	9384	1130	31	22	07BA	1						
9325	2310	5	22	06AA	1	9384	1130	41	22	07CA	1						
9325	2310	5	22	06AA	1	9384	1130	51	22	05AA	1						
9325	2310	5	22	39AA	1	9384	1130	71	22	10AA	1						
9325	2310	5	22	42AA	1	9384	1130	81	22	02AA	1						
9325	2310	5	22	42AA	1	9384	1160	04	22	14AA	1						
9325	2310	5	22	44AA	1	9384	1170	41	22	03BA	1						
9325	2310	5	22	45AA	1	9384	1180	61	22	05BA	1						
9325	2310	5	22	39AA	1	9384	1190	51	22	08AA	1						
9325	2310	5	22	39AA	1	9384	1190	51	22	09AA	1						
9325	2310	5	22	15AA	1	9384	1190	56	22	38AA	1						
9325	2310	5	22	33AA	1	9384	1190	56	22	04AA	1						
9325	2310	5	22	03BA	1	9384	1190	57	22	07AA	1						
9325	2310	5	22	34AA	1	9384	1190	58	22	25AA	1						
9325	2310	5	22	40AA	1	9384	1190	58	22	20AA	1						
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9325	2310	5	22	37AA	1	9384	1190	66	22	14AA	1						
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9325	2310	5	22	18AA	1	9384	1190	65	22	01BA	1						
9325	2310	5	22	26AA	1	9384	1190	51	22	18AA	1						
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9325	2310	5	22	18AA	1	9384	1191	21	22	06BA	1						
9325	2310	5	22	20AA	1	9384	1200	01	22	11AA	1						
9325	2310	5	22	20AA	1	9384	1200	01	22	12AA	1						
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9325	2310	5	22	03BA	1	9384	1200	51	22	11BA	1						
9325	2310	5	22	40AA	1	9384	1200	91	22	13AA	1						
9325	2310	5	22	20AA	1												
9325	2310	5	22	07AA	1												
9325	2310	5	22	40AA	1												
9325	2310	5	22	29BA	1												
9325	2310	5	22	06AA	1												
9325	2310	5	22	06BA	1												
9325	2310	5	22	45BA	1												
9325	2310	5	22	45CA	1												
9325	2310	5	22	06AA	1												
9325	2310	5	22	37BA	1												
9325	2310	5	22	40AA	1												
9325	2310	5	22	34AA	1												
9325	2310	5	22	31AA	1												
9325	2310	5	22	15AA	1												
9325	2310	5	22	58AA	1												
9325	2310	5	22	38BA	1												
9325	2310	5	22	38AA	1												
9325	2310	5	22	15BA	1												
9325	2310	5	22	51CA	1												
9325	2310	5	22	01DA	1												
9325	2310	5	22	26AA	1												
9325	2310	5	22	26BA	1												
9325	2310	5	22	17AA	1												
9325	2310	5	22	45AA	1												
9325	2310	5	22	55AA	1												
9325	2310	5	22	02CA	1												
9325	2310	5	22	15CA	1												
9325	2310	5	22	21BA	1												
9325	2310	5	22	21DA	1												
9325	2310	5	22	15AA	1												
9325	2310	5	22	23AA	1												
9325	2310	5	22	23AA	1												
9325	2310	5	22	23AA	1												

PART NO 部品番号	OTHER MODELS IN WHICH THIS PART IS BEING USED	使用 機種	PART NO 部品番号	OTHER MODELS IN WHICH THIS PART IS BEING USED	使用 機種	PART NO 部品番号	OTHER MODELS IN WHICH THIS PART IS BEING USED	使用 機種
<p>Almost all parts having part numbers the four leftmost digits of which are 1021~1080・1136・1139・4425 are parts which are also used in the EP1080/2050. Since the number of these parts is great, they have been omitted from this list. 部品番号の上4桁が1021~1080・1136・1139・4425の部品は、ほとんどがEP1080/2050の共通部品です。 部品点数が多いため、リストより省略してあります。</p>			1273-2515-01	EP5420/5425/2050		9331-2310-21	EP2050/1080	
0704-4127-01	EP8601/8602/8603/8605 CF80		1273-3516-01	EP2050/1080 D:30		9332-5310-21	EP2050/1080	
0704-5401-01	EP5420/5425/5320/5325/1080		1274-2611-01	EP2050/1080 D:30		9332-5310-31	EP2050	
0721-4203-12	EP5420/5425/5320/5325		1274-3103-02	EP2050/1080		9334-1310-11	EP2050	
0722-4913-01	EP9760/9765/2050/1080		1274-3603-01	EP2050		9334-2320-31	EP3190D/2050/1080/8603/8605 CF80 D:30	
0958-7312-01	EP2050		1274-3604-01	EP2050		9334-2620-31	EP5420/5425/2050	
1100-1320-05	EP3190D/2050/1080		1274-3605-01	EP5420/5425/2050		9335-1310-11	EP2050/1080	
1100-1321-13	EP2050/1080 CF80		1300-3122-21	EP8603/8605 CF70/80		9335-1310-21	EP2050/1080	
1100-1330-07	EP4232/4233/2050		1300-3122-44	EP2050 D:30		9335-1310-41	EP2050/1080	
1100-1332-14	EP2050/1080 CF80		1300-3132-12	EP2050/1080		9335-1310-51	EP2050/1080	
1100-1333-10	EP3190D/2050/4211 D:30		1300-4394-22	EP2050		9335-1311-01	EP2050/1080	
1100-1335-03	EP2050/1080 D:30		1300-4394-29	EP5420/5425		9341-2110-11	EP2050/1080	
1100-1341-05	EP3190D/8602/2050 D:30		1400-1122-04	EP3190D/2050/1080 D:30		9341-2310-11	EP2050	
1100-1341-07	EP2050 CF70/80		1400-1134-02	EP9760/9765/2050/1080 D:30		9341-2620-31	EP2050/1080	
1100-1342-08	EP2050 CF70/80		1400-1145-03	EP3190D/2050 CF80		9343-4210-21	EP2050/1080	
1100-1344-12	EP2050 D:30		1400-1154-06	EP3190D/2050/1080 D:30		9343-4310-21	EP2050/1080	
1100-1344-15	EP5420/5425/2050		1400-1185-10	EP5420/5425/2050 D:30		9343-4720-81	EP2050/1080/8603/8605	
1100-1901-01	EP2050		1400-1226-03	EP3190D/2050/1080 D:30		9346-3310-21	EP2050/1080 D:30	
1100-3130-08	EP2050/1080		1400-2110-01	EP2050/1080 D:30		9346-3320-32	EP2050/1080/8603/8605	
1100-3132-04	EP2050 CF80 D:30		1400-2153-08	EP2050		9346-3620-41	EP5420/5425/2050	
1100-3190-01	EP2050		1400-2230-02	EP5420/5425/2050		9346-3621-01	EP2050/1080	
1129-7303-01	EP2050 D:30		1400-2230-04	EP2050		9346-3720-51	EP2050/1080	
1132-2043-01	EP2153Z/152PRO		1400-4333-06	EP2050 CF70/80		9351-2310-71	EP2050	
1132-2044-01	EP2153Z/152PRO		1500-2320-02	EP2050/1080/8603/8605		9351-2310-81	EP2050	
1200-1342-03	EP2050 CF70/80		1500-2331-60	EP2050/1080		9352-2310-82	EP2050	
1200-1343-02	EP2050		1500-2341-07	EP2050/1080 D:30		9352-2311-12	EP2050	
1200-1411-01	EP8602/2050		1500-2513-18	EP2050 CF80 D:30		9352-2311-22	EP2050	
1200-1431-01	EP2050/1080 D:30		1500-2521-05	EP5420/5425/2050		9352-2311-32	EP2050	
1200-1461-03	EP2050 CF70/80		1500-2620-07	EP3190D/2050 D:30		9352-2311-42	EP2050	
1200-1511-01	EP2050/1080		1500-2640-04	EP3190D/2050 CF80		9352-6310-11	EP2050/1080	
1200-1531-01	EP2050/1080 CF80		4427-4604-02	EP2050		9352-6310-31	EP2050/1080	
1200-1566-04	EP2050/1080		9312-1310-22	EP1080		9372-1310-31	EP2050	
1200-1641-01	EP2050 D:30		9312-1310-71	EP2050		9372-2310-31	EP2050	
1200-1672-02	EP5420/5425/4320		9313-1310-52	EP2050		9381-1807-05	EP2050/1080 D:30	
1200-2105-05	EP3190D/2050/1080/8603/8605		9313-1310-61	EP2050		9381-4110-21	EP2050/1080 D:30	
1200-2105-06	EP3190D/2050/1080 D:30		9314-1310-31	EP2050/1080		9381-4210-51	EP2050/1080	
1200-2125-01	EP2050/8603/8605 D:30		9314-1310-51	EP2050/1080		9381-4310-81	EP2050/1080	
1200-2226-22	EP2050/1080		9314-1310-61	EP2050		9381-4310-91	EP2050/1080	
1200-2625-03	EP9760/9765/2050/8603/8605		9321-2310-41	EP2050/1080		9381-4320-22	EP2050/1080 D:30	
1200-3134-16	EP3190D/2050/1080/8603/8605 CF80 D:30		9321-2310-51	EP2050		9384-1010-31	EP2050	
1200-3223-12	D:30		9321-2621-11	EP2050/1080		9384-1110-61	EP2050/1080	
1200-5211-05	EP2050/1080		9322-1310-31	EP2050		9384-1120-21	EP9760/9765/2050	
1200-5212-04	EP2050/1080 D:30		9322-1310-41	EP2050		9384-1120-41	EP3190D/2050 D:30	
1200-5242-06	EP2050/1080/8603/8605		9323-1310-11	EP2050/1080		9384-1220-31	EP3190D/2050/4211	
			9325-2310-53	EP2050		9384-1310-11	EP2050/1080	
			9325-2310-62	EP2050		9384-1310-41	EP1080	
			9325-2310-73	EP2050		9384-1310-51	EP2050/1080	
			9325-3310-11	EP2050		9384-1310-71	EP2050	
			9325-3310-21	EP2050		9384-1310-81	EP2050/1080	
			9326-2900-05	EP2050/8503/8605 D:30		9384-1600-04	EP2050/8603/8605	
						9384-1720-41	EP2050/1080 D:30	

PART NO. 部品番号	OTHER MODELS IN WHICH THIS PART IS BEING USED	使用 機種	PART NO. 部品番号	OTHER MODELS IN WHICH THIS PART IS BEING USED	使用 機種	PART NO. 部品番号	OTHER MODELS IN WHICH THIS PART IS BEING USED	使用 機種
9384-1820-61	EP9760/9765/2050							
9384-1900-53	EP2050/1080 D:30							
9384-1900-54	EP2050/1080 D:30							
9384-1900-56	EP2050/1080 D:30							
9384-1900-57	EP2050/1080/8603/8605 D:30							
9384-1900-58	EP3190D/2050/1080							
9384-1900-61	EP2050/1080/8603/8605							
9384-1900-64	EP2050/1080 D:30							
9384-1900-65	EP2050/1080 D:30							
9384-1920-51	EP2050							
9384-1921-11	EP2050/1080 CF80							
9384-1921-21	EP2050/1080 D:30							
9384-2010-21	EP2050/1080 D:30							
9384-2010-31	EP2050/1080 D:30							
9384-2010-41	EP2050/1080 D:30							
9384-2310-41	EP2050/1080 D:30							
9384-2800-36	EP3190D/2050/1080							
9384-2920-91	EP2050/1080							

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1 PRECAUTIONS FOR HANDLING THE PWBs

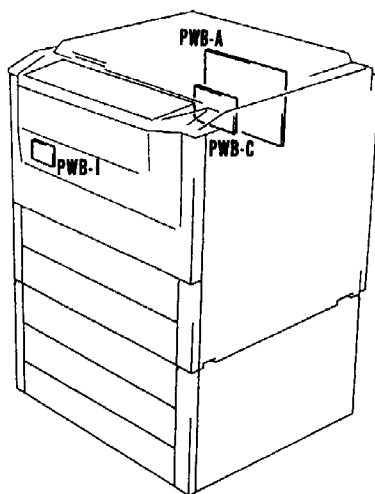
1-1. Precautions for Transportation and Storage

- a) Before transporting or storing the PWBs, put them in protective conductive cases or bags so that they are not subjected to high temperature (they are not exposed to direct sunlight.)
- b) Protect the PWBs from any external force so that they are not bent or damaged.
- c) Once the PWB has been removed from its conductive case or bag, never place it directly on an object that is easily charged with static electricity (carpet, plastic bags, etc.).
- d) Do not touch the parts and printed patterns on the PWBs with bare hands.

1-2. Precautions for Replacement/Inspection

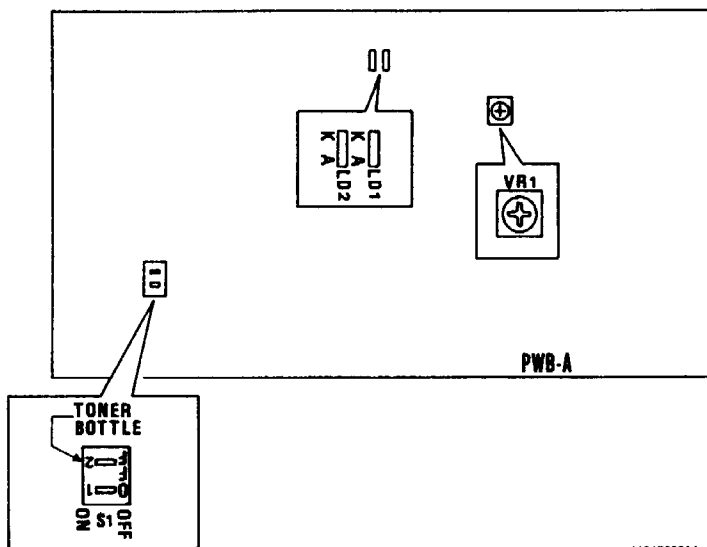
- a) Whenever replacing the PWB, make sure that the power cord of the copier has been unplugged.
- b) When the power is on, the connectors must not be plugged in or unplugged.
- c) Use care not to strap the pins of an IC with a metal tool.
- d) When touching the PWB, wear a wrist strap and connect its cord to a securely grounded place whenever possible. If you cannot wear a wrist strap, touch the metal part before touching the PWB to discharge static electricity.

2-1. PWB Locations



1134S001AA

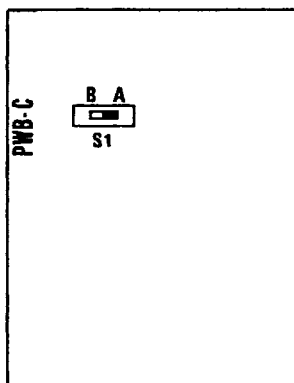
2-2. Master Board (PWB-A)



1134S002AA

Symbol	Name	Description									
S1A-1	Vacant (Not used)	Vacant (Not used)									
S1A-2	Toner Collection Box Select Switch	<p>When the Paper Feed Cabinet is fitted to the copier, set this switch to the required position according to the capacity of the Toner Collection Box.</p> <table border="1"> <thead> <tr> <th>Paper Feed Cabinet</th><th>Collection Capacity</th><th>S1A-2</th></tr> </thead> <tbody> <tr> <td>Not fitted</td><td>80 K</td><td>ON</td></tr> <tr> <td>Fitted</td><td>180 K</td><td>OFF</td></tr> </tbody> </table> <p>Initial setting = OFF</p>	Paper Feed Cabinet	Collection Capacity	S1A-2	Not fitted	80 K	ON	Fitted	180 K	OFF
Paper Feed Cabinet	Collection Capacity	S1A-2									
Not fitted	80 K	ON									
Fitted	180 K	OFF									
VR1A	DC4.7V Adjusting Variable Resistor	For factory setting. Must not be used.									
LD1A	Power Voltage Checking LED	For visual check on the DC5V output.									
LD2A	Power Voltage Checking LED	For visual check on the DC24V output.									

2-3. Power Supply Board (PWB-C)

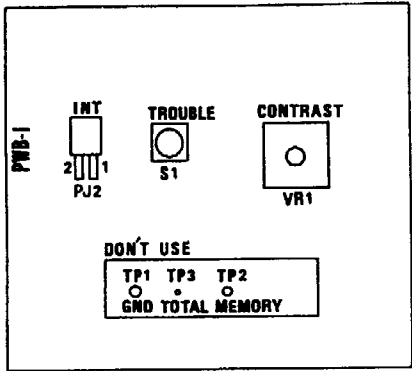


1134S003AA

- When the DT-103 is fitted to the copier, this switch is used to keep the power (DC5V) supplied to the DT-103 if the Power Switch is turned OFF.

S1C	Description	Initial Setting
Position A	DC5V is shut off when the Power Switch is turned OFF.	*
Position B	DC5V is supplied if the Power Switch is turned OFF.	

2-4. Tech. Rep. Settings Switches Board (PWB-I)



11349004AB

Symbol	Name	Description
S1	Trouble Reset Switch	Used to reset trouble related to Exposure Lamp malfunction (C04XX) and Fusing malfunction (C05XX).
VR1	Contrast Adjusting Variable Resistor	Used to adjust the contrast of the Display.
PJ2	Initialize Points	Used to forcibly reset a jam/trouble that occurred due to incorrect operation, etc. when it cannot be reset by opening and closing the Front Door or pressing S1.
TP1	GND Test Point	Ground used for memory clear.
TP2	Memory Clear Test Point	Used to clear data other than all values counted by the Electronic Counters.

<Point Clearing Procedure>

- Initialize Points (PJ2)
 1. Turn the Power Switch OFF.
 2. With the PJ2I points (1, 2) shorted, turn the Power Switch ON.
- Memory Clear Test Point (TP2)
 1. Turn the Power Switch OFF.
 2. With the TP1 and TP2 points shorted, turn the Power Switch ON.

NOTES

- When incorrect display/incorrect operation has occurred, reset and clear it in the following sequence:
 Initialize Points (PJ2) → Memory clear Test Point (TP2)
- When memory has been cleared, each mode must be set again (see below).

<List of Data Cleared by the Switch and Points>

Clearing Method Data Cleared	Front Door Open/Close	Trouble Reset Switch S1	Initialize Points PJ2	Memory Clear Test Point TP2
Jam display	O	—	O	—
Trouble display (other than Exposure/Fusing)	O	—	O	—
Trouble display (Exposure/Fusing only)	—	O	O	—
Incorrect display/incorrect operation	—	—	O	O
Copy mode program	—	—	—	O
User's choice	—	—	—	O
Tech. Rep. choice	—	—	—	O
F5/F7 setting	—	—	—	O
System setting	—	—	—	O
ADF setting	—	—	—	O
Level history	—	—	—	O
RD mode setting	—	—	—	O
Admin. mode	—	—	—	O
Adjust mode	—	—	—	O

O: Cleared. —: Not cleared.

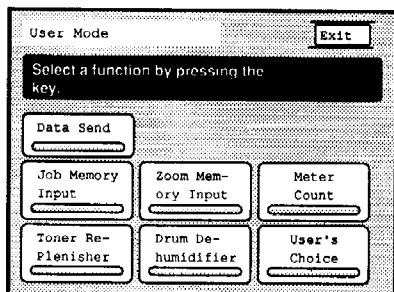
Note: When memory has been cleared, "Level History" must be selected and the required value entered into "ATDC Set".

3 USER'S CHOICE MODE

- This mode is used by the user to make various settings according to user requirements.

3-1. User's Choice Mode Menu Screen

- Select the User Mode key on the control panel.



1134P359CA

- From among the modes displayed, select User's Choice to enter the User's Choice mode.
- The User's Choice mode has a total of six screens. Press any of 1/6, 2/6, 3/6, 4/6, 5/6 and 6/6 to switch to the required menu screen as described below.

Note: "The selection Data Send" is displayed only when the copier is fitted with the DT-103.

3-2. User's Choice Mode Setting Procedure

<Setting Procedure>

1. Press the User Mode key on the control panel.
2. Select the desired menu screen from among 1/6, 2/6, 3/6, 4/6, 5/6 and 6/6 displayed at the bottom of the screen.
3. On the menu screen selected, select the mode to be set and make settings as required.
4. After the settings are complete, press the "Enter" key to enter the settings.

Note: The mode selected is highlighted.

<Leaving the Mode>

Perform any one of the following steps.

- Press the Panel Reset Key.
- Press "Exit" on the screen.

3-3. Settings in the User's Choice Mode

3-3-1. Menu screen 1/6

User's Choice 1/6 Exit

Select a key to change settings, or
press Pg.# key for additional menu.

Mixed Orig. Detection: OFF

Language Selection: English

Paper Priority: Letter/D/1

Copy Mode Priority: Auto Size

1/6 2/6 3/6 4/6 5/6 6/6

1134P368EA

1. Mixed Original Detection mode

Used to select "Mixed Original Detection" or "High Speed".

Mixed Orig. Detection ON: APS/AMS is performed for all originals loaded in the Automatic/Duplexing Document Feeder. (A paper size that can be loaded both lengthwise and crosswise is acceptable.)

Mixed Orig. Detection OFF: APS/AMS is performed for only the first sheet of paper loaded in the Automatic/Duplexing Document Feeder.

Screen Display	Description	Initial Setting
ON	Mixed Original Detection enabled (High speed mode disabled)	
OFF	Mixed Original Detection disabled (High speed mode enabled)	*

2. Language Selection

Used to specify the language to be displayed on the screen according to the user or area.

<USA/Canada Area>

Screen Display	Initial Setting
English	*
French	
Spanish	
Portuguese	

<Europe Area>

Type A

Screen Display	Initial Setting
German	*
English	
French	
Dutch	

Type B

Screen Display	Initial Setting
Italian	*
Spanish	
Portuguese	
English	

Type C

Screen Display	Initial Setting
Danish	*
Norwegian	
Swedish	
English	

3. Paper Priority

Used to select the paper in the priority paper source in the AMS or Manual Mode.

Paper Source	Initial Setting
1st Drawer	*
2nd Drawer	

Paper Source	Paper Feed Option	Initial Setting
3rd Drawer	Can be exchanged for the PF-102/PF-202/PF-2D Paper Feed Cabinet.	
4th Drawer		
5th Drawer	Can be exchanged for the AD-5.	
C-301	Large Capacity Cassette	

4. Copy Mode Priority

Used to select the Auto Mode which is given priority when the Power Switch is turned ON or Panel Reset Key pressed.

Screen Display	Initial Setting
Auto Paper	*
Auto Size	
Manual	

3-3-2. Menu screen 2/6

The screenshot shows a menu screen titled "User's Choice 2/6" with an "Exit" button in the top right corner. Below the title is a black box with white text that reads: "Select a key to change settings, or press Pg # key for additional menu." The main area of the screen contains five settings, each with a label and a value, and a progress bar to the right of the value:

- Expo. Mode Priority: Auto
- Expo. Level Priority: Normal
- Manual Expo. Adjust: Mode 1
- Finishing Priority: Non Sort

At the bottom of the screen is a row of six buttons labeled 1/6, 2/6, 3/6, 4/6, 5/6, and 6/6. The 2/6 button is highlighted.

1134P370CA

1. Exposure Mode Priority

Used to select the Exposure mode which is given priority when the Power Switch is turned ON or Panel Reset Key pressed.

Screen Display	Initial Setting
Auto	*
Manual	

2. Exposure Level Priority

- Used to select the auto exposure level in the Auto Exposure mode.
- Used to select the manual exposure level when the Auto Exposure mode has been switched to the Manual Exposure mode.

<Auto Exposure Level Setting>

Screen Display	Description	Initial Setting
Lighter	Equivalent to EXP. 4.5	
Normal	Equivalent to EXP. 5.0	*
Darker	Equivalent to EXP. 5.5	

<Manual Exposure Level Setting>

Description	Initial Setting
EXP. 1	
EXP. 2	
EXP. 3	
EXP. 4	
EXP. 5	*

Description	Initial Setting
EXP. 6	
EXP. 7	
EXP. 8	
EXP. 9	

Note: EXP. 1: Lightest
EXP. 9: Darkest

3. Manual Exposure Adjustment

Used to select the exposure voltage level in the Manual Exposure mode according to the type of the original used.

Screen Display	Description	Initial Setting
Mode 1	Ordinary/photo originals	*
Mode 2	Originals other than in Modes 1 and 3	
Mode 3	Colored originals	

<List of Manual Exposure Voltages Based on Modes>

		Manual Exposure Voltage (V)									
		EXP.	1	2	3	4	5	6	7	8	9
Mode	Mode 1	+8	+5	+3	+1	0	-1	-3	-5	-8	
	Mode 2	+8	+6	+5	+3	0	-2	-4	-6	-8	
	Mode 3	+8	+7	+6	+4	0	-3	-5	-7	-8	

Note: EXP. 5 is a voltage value adjusted automatically in the "F5" mode.

4. Priority Sort

Used to select the priority exit mode when the copier is fitted with an exit option.

Screen Display	Initial Setting
Non Sort	*
Sort	
Sort & Staple	
Group	

3-3-3. Menu screen 3/6

User's Choice

Exit

Select a key to change setting, or
press Pg # Key for additional menu.

Auto Panel Reset:

1min.

Energy Saver Mode:

OFF

Drum Dehumidifier:

OFF

Counter Removal:

ON

1/6

2/6

3/6

4/6

5/6

6/6

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1. Auto Panel Reset

Used to select "the Reset Timing" or "No Reset" to the initial mode at the end of a copy cycle or a given period of time after the final key is pressed.

Screen Display	Initial Setting
1 min.	*
2 min.	
3 min.	
5 min.	
No Reset	

2. Energy Saver Mode

Used to turn "ON" or "OFF" the Energy Saver Mode. Set the time for this Mode when "ON" is selected.

Description	Initial setting
1 to 10 min.	
OFF	*

<Procedure>

- To select "ON", enter the required value from the 10-key pad. When the value entered is wrong, press the Clear Key to clear the value to zero. Then, enter a correct value.
- To select "OFF", press "OFF" on the screen.

3. Drum Dehumidifier

Used to turn "ON" or "OFF" the Drum Dehumidifier when the Power Switch is turned ON.

Screen Display	Initial Setting
ON (Auto)	
OFF	*

4. Counter Removal

Used to turn "ON" or "OFF" the reset function when the Plug-In Counter/Magnetic Card (D-102) is pulled out.

Screen Display	Description	Initial Setting
ON	Reset to the initial mode.	*
OFF	Not reset to the initial mode.	

3-3-4. Menu screen 4/6

The screenshot shows a menu screen with a title bar 'User's Choice' and an 'Exit' button. Below the title bar is a black box with white text: 'Select a key to change setting, or press Pg.# Key for additional menu.' The menu items are: 'Intelligent Sort: ON', 'Confirmation Beep: ON', 'Original Thickness: Standard', and 'Smaller Originals: EnableCopy'. At the bottom are six buttons labeled 1/6, 2/6, 3/6, 4/6 (highlighted), 5/6, and 6/6.

1134S030CA

1. Intelligent Sort

Used to turn "ON" or "OFF" the Intelligent Sort function (which automatically switches between Sort and Non Sort according to the number of documents) when a paper exit option is fitted to the copier and used with an Automatic/Duplexing Document Feeder.

<When set to ON>

- When the number of documents is 1, Non Sort is selected.
- When the number of documents is 2 or more, Sort is selected.

Screen Display	Description	Initial Setting
ON	Switched automatically.	*
OFF	Not switched automatically.	

Note: The Intelligent Sort mode functions when APS/AMS is selected with the Intelligent Sort mode set to "ON" and the "Mixed Orig. Detection" set to "OFF (high speed)".

2. Confirmation Beep

Used to turn "ON" or "OFF" the Confirmation Beep when any of the keys on the control panel or the Mode Keys on the screen is pressed.

Screen Display	Description	Initial Setting
ON	Beep sounds.	*
NO	Beep does not sound.	

3. Original Thickness

Used to select between bringing and not bringing originals fed by the Automatic/Duplexing Document Feeder to a stop against the Original Scale.

Screen Display	Description	Initial Setting
Standard	Stopped against the Original Scale.	*
Thin	Not stopped against the Original Scale.	

4. Smaller Originals

Used to turn "ON" or "OFF" the copying of originals of the minimum detectable size (less than A5 lengthwise).

Screen Display	Description	Initial Setting
ON	Originals are copied onto paper fed through the priority paper source.	*1
OFF	Warning is displayed and copying is disabled.	*2

*1: Europe Area, *2: USA/Canada Area

3-3-5. Menu screen 5/6

1134S031CA

1. Custom 2-in-1

Used to specify the priority modes (Paper, Zoom, Margin, Erase) when 2-in-1 is selected.

Mode	Description	Initial Setting
Paper	Auto paper/select a give drawer	Auto paper
Zoom	Fixed zoom ratio	×0.707
Margin	Position : Right side/left side Mode : Full size (shift)/reduction Width : 10 mm/15 mm/20 mm	No setting
Erase	Position : Right side/left side/frame erase/upper side (feeding direction)/center Width : 10 mm/15 mm/20 mm	No setting

Note: When the erase position is set to the frame erase or upper side (feeding direction), the erase width is automatically fixed at 10 mm.

2. Custom 2-in-1 Separation

Used to specify the priority modes (Paper, Zoom, Margin, Erase) when 2-in-1 Separation is selected.

Mode	Description	Initial Setting
Paper	Auto paper/select a give drawer	Auto paper
Zoom	Fixed zoom ratio	×1.414
Margin	Position : Right side/left side Mode : Full size (shift)/reduction Width : 10 mm/15 mm/20 mm	No setting
Erase	Position : Right side/left side/frame erase/upper side (feeding direction)/center Width : 10 mm/15 mm/20 mm	No setting

Note: When the erase position is set to the frame erase or upper side (feeding direction), the erase width is automatically fixed at 10 mm.

3. Custom Book Copy

Used to specify the priority modes (Paper, Zoom, Margin, Erase) when Book Copy is selected.

Mode	Description	Initial Setting
Paper	Select a give drawer	1st Drawer
Zoom	Fixed zoom ratio	×1.000
Margin	Position : Right side/left side Mode : Full size (shift) Width : 10 mm/15 mm/20 mm	No setting
Erase	Position : Right side/left side/frame erase/upper side (feeding direction)/center Width : 10 mm/15 mm/20 mm	No setting

Note: When the erase position is set to the frame erase or upper side (feeding direction), the erase width is automatically fixed at 10 mm.

4. Special Paper

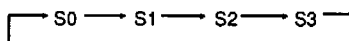
Used to specify the type of paper loaded in each paper source.

Screen Display
S0: Normal
S1: Recycled
S2: Insert Paper
S3: Not for 2-Sided

The initial settings are all S0.

<Procedure>

- Select the paper source to be set and press the key on the screen to change the displayed paper type as shown below:



<APS/Automatic Paper Source Switching Operation>

Special Paper	APS	Automatic Paper Source Switching (Paper of the same type only)
S0: Normal	O	O
S1: Recycled	O <i>Note 1</i>	O
S2: Insert Paper	—	—
S3: Not for 2-Sided	O <i>Note 2</i>	O <i>Note 2</i>

O: Functions.

—: Does not function.

Note 1: A warning is displayed and a copy cycle is started by pressing the Start Key.

Note 2: Automatic switching is performed only in the 1-sided copy mode.

3-3-6. Menu screen 6/6

User's Choice Exit

Select a key to change setting, or
press Pg # Key for additional menu.

CopyTrack: OFF

User Help:

Max. Copy Sets: OFF

1/6 2/6 3/6 4/6 5/6 Pg.

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1. Copy Track

Used to turn "ON" or "OFF" the Copy Track function per account (max. 26 accounts).

Screen Display	Description	Initial Setting
ON	Copy Track is made.	
OFF	Copy Track is not made.	*

<When ON is selected>

When the Access # is set by the administrator for each account, the number of copy cycles per account is monitored. (A simple form of the D-102 function is provided.)

User's Choice Enter Exit

For each Account #, you can assign
change Access # or reset counters.

CopyTrack

Account # 18

Access # 1234

Total Count 148839

Size Count 478

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<Setting Procedure>

1. Select "ON" and press the "Enter" Key.
2. Press the ▼ / ▲ key to access the Account # to be administrated. (Max. 26 accounts)
3. Press the Access # key and register the access number corresponding to the above Account # from the 10-key pad. (Max. 4 digits)

Note: If the access number has been changed or the number entered is wrong, press the Clear Key to clear the number and re-enter.

4. Press the "Enter" Key to enter the access number.

Note: When a copy is to be made after the access number has been entered, the access number must be entered and the Access # Key pressed to enter the copy mode.

<Counter Clearing Method>

- Select the counter to be cleared and press the Clear Key.

2. User Help

When the user sends a User Help code according to the status of the copier fitted with the DT-103, this function transmits that status to the center.

<Setting Procedure>

- Enter a 3-digit value from the 10-key pad (max. six codes).

Note: To transmit the User Help code, enter the value and press "Data Send" on the User Mode screen.

3. Max. Copy Sets

Used to turn "ON" or "OFF" the maximum number setting of copy cycles.

Select "ON" to limit the number of copy cycles that can be performed in a single copy operation.

Description	Initial Setting
1-99	
OFF	*

<Setting Procedure>

- To set the maximum number of copy cycles, enter the required value (1 to 99) from the 10-key pad (without pressing any key on the screen). When it is not desired to set the maximum number, select "OFF" on the screen.

- This mode is used by the Tech. Rep. to set, confirm, adjust and/or register various Tech. Rep. functions.

4-1. Tech. Rep. Mode Menu Screen

Tech. Rep. Mode Menu		Exit
Function <input type="text"/>	ROM Version <input type="text"/>	
Tech. Rep. Choice <input type="text"/>	RD Mode <input type="text"/>	
System Input <input type="text"/>	ADF Check <input type="text"/>	
Counter <input type="text"/>	Level History <input type="text"/>	
I/O Check <input type="text"/>	Machine status <input type="text"/>	
Last Trouble <input type="text"/>	Admin. Mode <input type="text"/>	

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4-2. Tech. Rep. Mode Setting Procedure

<Setting Procedure>

1. Place the copier in the Tech. Rep. mode by pressing the following Keys:

Stop Key → "0" → Stop Key → "1"

2. Select the mode to be set from among those displayed on the Tech. Rep. Mode Menu screen.
3. Make various mode settings according to the screens selected.

<Living the Mode>

- Press the Panel Reset Key.

4-3. Settings in the Tech. Rep. Mode

1. Function

- Used to adjust/confirm various Tech. Rep. functions.

Function		Menu
F1 Paper/Passage		F7 Orig. Sensor
F2 Drum/Trans		F8 ATDC Adjust
F3 Exp. Lamp		
F4 HV Separator		
F5 Optimum & AE		FF F8 + F5
F6 Edit Ref. Adj		

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1-1. Function mode setting procedure

<Setting Procedure>

1. Select "Function".
2. Select the function mode to be adjusted/confirmed.
3. Press the Start Key to start the operation of the corresponding mode.
4. Press the Stop Key to stop the operation.

1-2. Settings in the Function mode

● F1 (Paper Passage)

This test can be initiated without having to wait for warm-up to complete.

<Operation time>

- This test continues until the Drawer or port selected for use runs out of paper.
- This test continues until the Stop Key is pressed.

● F2 (Drum/Trans)

Used to confirm the output of the High Voltage Unit (HV) for Drum Charge/Image Transfer Coronas. (For factory setting)

<Operation time>

- This function runs for 30 seconds.
- This function runs until the Stop Key is pressed.

● F3 (Exp. Lamp)

Used to confirm that the Exposure Lamp is lit.

<Operation time>

- This test runs for 30 seconds.
- This test runs until the Stop Key is pressed.

● F4 (HV Separator)

Used to confirm the output of the High Voltage Unit (HV) for the Paper Separator Corona. (For factory setting)

<Operation time>

- This function runs for 60 seconds.
- This function runs until the Stop Key is pressed.

● F5 (Optimum & AE)

Used to make Vg level adjustment, manual optimum exposure adjustment, and automatic AE Sensor optimum exposure adjustment.

<Operation time>

- This function runs for 30 seconds.
- This function runs until the Stop Key is pressed.

● F6 (Edit Ref. Adj)

Used to adjust the edit position according to the pattern output by the Image Erase Lamp.

<Operation time>

- This function runs for one copy cycle.

● F7 (Orig. Sensor)

Used to automatically adjust the Original Size Detecting Sensor.

<Operation time>

- This function continues until the adjustment ends.

● F8 (ATDC Adjust)

This function agitates the developer to automatically adjust the ATDC Sensor level.

<Operation time>

- This function runs for 3 minutes.
- This function runs until the Stop Key is pressed.

● FF (F8 + F5)

Used to execute the F8 and F5 modes (at the time of set-up).

<Operation time>

- This function runs for 3 minutes 30 seconds.
- This function runs until the Stop Key is pressed.

1-3. Components energized in the Function mode

Component \ Mode	F1	F2	F3	F4	F5	F6	F7	F8	FF
Main Drive Motor	O	O	O	O	O	O	—	O	O
Fan Motors	O	O	O	O	O	O	—	O	O
Toner Replenishing Motor	O	—	—	—	—	O	—	—	—
Scan	O	—	O	—	O	O	—	—	O
Paper Feed	O	—	—	—	—	O	—	—	—
Drum Charge/Image Transfer Coronas	O	O	O	—	O	O	—	O	—
Paper Separator Corona	O	—	O	O	O	O	—	O	O
Developing Bias	O	—	O	O	O	O	—	O	O
Exposure Lamp	O	—	O	—	O	—	—	—	O
Main Erase Lamp	O	O	O	O	O	O	—	O	O
Image Erase Lamp	O	—	O	—	O	O	—	O	O
Paper Separator Finger	O	—	—	—	—	O	—	—	—
Jam detection	O	—	—	—	—	O	—	—	—
Malfunction detection	O	O	O	O	O	O	O	O	O

O : Energized

—: Not energized

2. Tech. Rep. Choice

- Used by the Tech. Rep. to make adjustments and confirmations of various Tech. Rep. functions.

Plug-In Counter	# of Sheets
Size Counter	A3
Total Counter	Mode 0
Maintenance Call	NO
Copy Kit Counter	NO
Toner Empty Stop	Disable

of Sheets Copy Cycle

Next

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Auto Paper Config.	Inch/Metric
Sorter Trouble	Enable Copy
Leading Edge Erase	Yes
Trailing Edge Erase	Yes
Loop Adjust (Drawer)	50
Loop Adjust (Man/LCT)	50

Inch/Metric Inch

Next

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Exp. Lamp Manual Adj.	
ATDC T/C Ratio	50

47-54

Next

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2-1. Tech. Rep. Choice mode setting procedure

<Setting procedure>

1. Select the Tech. Rep. mode.
2. Using ▼ / ▲ key, select the mode to be set/adjusted.

Note: Press the "Next"/"Back Up" key to switch the screen from one to another.

3. Using the ◀ / ▶ key, specify the function to be set.
4. Press the "Enter" Key to enter the set function.

2-2. Settings in the Tech. Rep. Choice mode

● Plug-In Counter

Used to select the counting method of the Plug-In Counter.

Screen Display	Initial Setting
# of Sheets	*
Copy Cycle	

Note: For the counting methods, see the Count-Up List on the next page.

● Size Counter

Used to select the paper size counted by the Paper Size Counter.

<Metric Area>

Screen Display	Initial Setting
No	
A3	*

Screen Display	Initial Setting
A3/B4	
A3/B4	

<Inch Area>

Screen Display	Initial Setting
No	
11 x 17	*

Screen Display	Initial Setting
11x14+LGR	
11x14+LGR	

Note: For the counting methods, see the Count-Up List given below.

● Total Counter

Used to select the counting method of each Counter according to the paper size and copy mode.

Screen Display	Description	Initial Setting
Mode 0	1 count per 1 copy cycle	*
Mode 1	Multiple count-up according to the paper size and copy mode	
Mode 2	Multiple count-up according to the paper size and copy mode	

Note: For the counting methods, see the Count-Up List given below.

<Count-Up List>

Copy Mode		1-Sided						2-Sided						Manual Feeding
Size Counter		Sizes other than those set			Sizes set			Sizes other than those set			Sizes set			
Total Counter		Mode 0	Mode 1	Mode 2	Mode 0	Mode 1	Mode 2	Mode 0	Mode 1	Mode 2	Mode 0	Mode 1	Mode 2	
Total Counter (Mechanical/Electronic)		1			1	2	2	2			2	4	4	1
Size Counter (Electronic)		0			1	1	2	0			2	2	0	0
Two-Sided Total Counter (Electronic)		0			0			1	1	2	1	1	4	0
Two-Sided Size Counter (Electronic)		0			0			0			1	1	4	0
Plug-In Counter (Mechanical)	# of sheets	1			1	2	2	1	2	2	1	4	4	1
	# of copy cycles	1			1	2	2	2			2	4	4	1

0: No count 1: 1 count 2: 2 counts 4: 4 counts

<Setting of the Tech. Rep. Choice Mode When the D-102 Is Installed on the Copier>

- When the D-102 is fitted to the copier, set the Tech. Rep. Choice Mode as follows according to the count-up mode of the D-102.

Count-Up Mode (D-102)	Tech. Rep. Choice Mode (Copier)			
	Plug-In Counter		Total Counter	
	# of sheets	# of copy cycles	Mode 0	Mode 1
All Size Mode	—	0	0	0
Size Mode I	0	—	0	—
Size Mode II				
Full Color Mode I				
Mono Color Mode I				
Special Mode I				
2-Sided Mode I	—	0	0	—
2-Sided Mode II				
Full Color Mode II				
Mono Color Mode II				
Special Mode II				

0 : Setting acceptable

— : Setting inhibited

● Maintenance Call

Used to select "YES" or "NO" for the Maintenance Call display when the Maintenance Counter reaches the set count.

Screen Display	Initial Setting
Yes	
No	*

Note: There are five different Maintenance Counters (up to five Counters may be set). When any of the Maintenance Counters has reached the set count the Maintenance Call message is displayed together with the inspection code "M1".

● Copy Kit Counter

Used to select "Yes" or "No" for "Copy Kit" counting by the Consumables Counter or to "Enable" or "Disable" a copy cycle when the Counter reaches the set count.

Screen Display	Description	Initial Setting
No	No count	*
Mode 1	Copy enabled when the Counter reaches the set count.	
Mode 2	Copy disabled when the Counter reaches the set count.	

Note: Select Mode 1 or 2 to start the Copy Kit Counter counting. If "No" has been set for Maintenance Call, the Maintenance Call message is displayed together with the inspection code "M4" when the Counter reaches the set count.

● Toner Empty Stop

Used to select "Disable Copy" or "Enable Copy" after a Toner Empty condition is detected.

Screen Display	Initial Setting
Enable Copy	
Disable Copy	*

Note: When "Disable Copy" has been selected, the copy cycle is inhibited on detection of a 2% or less toner-to-carrier ratio.

● Auto Paper Config.

Used to automatically select "Metric or Inch" paper or "Metric" paper for the original size detected.

Screen Display	Description	Initial Setting
Metric/Inch	The copier automatically selects metric or inch paper for the original detected.	*
Metric	The copier automatically selects metric paper for all originals detected.	

● **Sorter Trouble**

Used to select "Enable Copy" or "Disable Copy" when a malfunction of the paper exit option is detected.

Screen Display	Description	Initial Setting
Enable Copy	Copy is enabled after detection of a malfunction.	*
Disable Copy	Copy is disabled after detection of a malfunction.	

Note: If a malfunction has already been detected when "Enable Copy" is selected, a warning is displayed only when the malfunctioning Mode detected is selected, and the Mode selected is not accepted.

● **Leading Edge Erase**

Used to select "Yes" or "No" for the Leading Edge Erase function.

Note: When "Yes" is selected, the erase width is approx. 3 mm.

Screen Display	Initial Setting
Yes	*
No	

● **Trailing Edge Erase**

Used to select "Yes" or "No" for the Trailing Edge Erase function.

Screen Display	Initial Setting
Yes	*
No	

Note: When "Yes" is selected, the erase width is approx. 3 mm.

● **Loop Adjust (Drawer)**

Used to adjust the loop length (before the Synchronizing Roller) of the paper fed from any of the 1st to 5th Drawers.

Code	Loop Length	Initial Setting
47	Approx. 4 mm	
48	Approx. 6 mm	
49	Approx. 8 mm	
50	Approx. 10 mm	*

Code	Loop Length	Initial Setting
51	Approx. 12 mm	
52	Approx. 14 mm	
53	Approx. 16 mm	

● Loop Adjust (Man/LCT)

Used to adjust the loop length (before the Synchronizing Roller) of the paper fed manually or from the paper feed option.

Code	Loop Length	Initial Setting
47	Approx. 4 mm	
48	Approx. 6 mm	
49	Approx. 8 mm	
50	Approx. 10 mm	*

Code	Loop Length	Initial Setting
51	Approx. 12 mm	
52	Approx. 14 mm	
53	Approx. 16 mm	

● Exp. Lamp Manual Adj.

Used to make fine-adjustment of the Lamp voltage in the Manual Exposure mode. When an optimum manual exposure level cannot be achieved by the execution of the "F5" function mode after the replacement of the PC Drum, etc., adjust the Exposure Lamp voltage in the range of -6 to +6V.

Code	Variable Voltage Value	Initial Setting
44	-6V	
45	-5V	
46	-4V	
47	-3V	
48	-2V	
49	-1V	
50	0V	*

Code	Variable Voltage Value	Initial Setting
51	+1V	
52	+2V	
53	+3V	
54	+4V	
55	+5V	
56	+6V	

Note: After the setting of this mode has been changed, the "F5" mode must be executed.

● ATDC Level

Used to specify the control level of the ATDC.

Code	T/C Ratio	Initial Setting
47	4.5%	
48	5.0%	
49	5.5%	
50	6.0%	*

Code	T/C Ratio	Initial Setting
51	6.5%	
52	7.0%	
53	7.5%	
54	8.0%	

3. System Setting

- This mode is used to set the fixed zoom ratio, paper size input, marketing area and Plug-In Counter, or to advance the Drum Charge Corona Wire.

System Input	Menu
Change Fixed Zoom Ratio	
Paper Size Input	
Marketing Area	
Plug-In Counter	
Advance Charge Wire	
Telephone # Input	

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3-1. System Setting setting procedure

<Setting procedure>

1. Select "System Setting".
2. Select the mode to be set.
3. Make the various settings according to the screens selected.

3-2. Settings in the System Setting mode

● Change Fixed Zoom Ratio

Used to reset a fixed zoom ratio to a desired value within the range $\times 0.500$ to $\times 2.000$.

<Setting procedure>

1. Select the fixed zoom ratio to be changed and clear it with the Clear Key.

Note: If the ratio cleared is not the one to be cleared, press the Panel Reset Key to return to the preceding zoom ratio.

2. Using the 10-key pad, set the desired zoom ratio within the range $\times 0.500$ to $\times 2.000$.
3. Press the "Enter" Key on the screen to enter the zoom ratio set.

● Paper Size Input

Used to set the paper size used in the corresponding paper source.

<Setting procedure>

1. Select the paper source for which you want to set the paper size (on the paper Size Input 1 screen).
2. When the paper source is selected, the display automatically switches to the Paper Size Input 2 screen. Using the \blacktriangledown / \blacktriangle key, select the paper used in the paper source selected, and press the "Enter" key.

● **Marketing Area**

Used to change the paper size/fixed zoom ratio according to the marketing area.

Screen Display	Initial Setting
MJ	*
MH	

Screen Display	Initial Setting
MC	
Others	

Note: When the marketing area has been changed, the copier must be initialized.

● **Plug-In Counter**

Used to disable or enable the copier depending on whether or not a Plug-In Counter or Magnetic Card is used when the copier is equipped with a Plug-In Counter or D-102.

Screen Display	Description	Initial Setting
ON	The copier is disabled when the Plug-In Counter or Magnetic Card is removed.	
OFF	The copier remains enabled even when the Plug-In Counter or Magnetic Card is removed.	*

Note: "ON" should be selected when the copier is equipped with a Plug-In Counter or D-102.

● **Advance Charge Wire**

Used to advance the Drum Charge Corona Wire to prevent uneven charging due to the Drum Charge Corona Wire contaminated, etc.

<Operation procedure>

- Press the "Enter" key to advance the Drum Charge Corona Wire by six counts.

Note: The number of advance cycles of the Drum Charge Corona Wire is displayed at "Charge Wire" on the Port/Option 3/3 screen. The maximum number of advance cycles is 185. If this value is exceeded, the advance operation is disabled.

● **Telephone # Input**

Used to register the telephone number of the Tech. Rep. so that the telephone number registered is displayed when a malfunction occurs or a Maintenance Call is displayed.

<Setting procedure>

- Press the Clear Key and register the telephone number using the 10-key pad (up to 19 digits).

Note: Use the Interrupt Key to register "—".

4. Counter

- This mode is used by the Tech. Rep. to set the counts of the Maintenance Counter and Consumables Counter or to show the counts of various counters.

The screenshot shows a menu titled "Counter" with a "Menu" button in the top right. The menu is organized into two columns. The left column contains: "Paper", "Jam", "Retry", "Trouble", and "Maintenance". The right column contains: "Port/Option", "Consumable", and "Auto CPU Reset". Each option has a corresponding input field to its right.

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4-1. Counter setting procedure

<Setting procedure>

1. Select "Counter".
2. Select the mode to be set/displayed.
3. Set or clear the count according to the screen selected.

4-2. Settings in the Counter mode

● Paper

Counts the number of sheets copied on a paper size/type basis (S0: standard paper, S1: recycled paper, S2: special paper, S3: 2-sided disabled paper).

Note: For such a paper size as A4 which can be loaded both lengthwise and crosswise, the count represents the sum of both.

<Paper Counter 1/2>

Paper Size	
A3	11 × 17
B4	11 × 14
A4	Legal
B5	Letter
A5	5-1/2 × 8-1/2
B6	FLS

<Paper Counter 2/2>

Paper Type
S0
S1
S2
S3

<Clearing procedure>

- Using the ▼/▲ key, select the paper size or paper type to be cleared and press the Clear Key.

Note: If the paper size or paper type has been cleared accidentally, press the Interrupt Key to return the counter to the count it had before clearing.

● Jam

Counts the number of jams that occurs in the copier or entire system (MCBJ) and per section.

<Jam Counter 1/3>

Screen Display	Description
MCBJ System	Jam occurrence ratio in the system
MCBJ Machine Only	Jam occurrence ratio in the copier only
Manual Feed	Number of jams that occurred at the Manual Feed Section
1st Drawer	Number of jams that occurred at the 1st Drawer
2nd Drawer	Number of jams that occurred at the 2nd Drawer
3rd Drawer	Number of jams that occurred at the 3rd Drawer

<Jam Counter 2/3>

Screen Display	Description
4th Drawer	Number of jams that occurred at the 4th Drawer
5th Drawer	Number of jams that occurred at the 5th Drawer
Dup Entrance	Number of jams that occurred at the Duplex Unit Entry
Dup Exit	Number of jams that occurred at the Duplex Unit Exit
Vertical Trans.	Number of jams that occurred in the Transport section
Horizontal Trans.	Number of jams that occurred in the Paper Separator section

Note: MCBJ = Total Counter value + Jam Counter value

<Jam Counter 3/3>

Screen Display	Description
Exit	Number of jams that occurred at the Exit section
Sorter	Number of jams that occurred in the paper exit option
ADF	Number of jams that occurred in the ADF
LCT	Number of jams that occurred in the Large Capacity Cassette on C-301 section

Note: When the PF-102 Paper Feed Cabinet is fitted to the copier, the count is displayed as the 3rd Drawer.

<Clearing procedure>

- Using the ▼/▲ key, select the count to be cleared and press the Clear Key.

Note: If the count has been cleared accidentally, press the Interrupt Key to return the counter to the count it had before clearing.

● **Retry**

Counts the number of feed retries which are made when no paper reaches the Paper Take-Up Sensor in a given period of time in order to reduce misfeeds (jams) caused by slip, etc. of the Paper Take-Up Roll.

Screen Display	Description
1st Drawer	Number of feed retries in the 1st Drawer
2nd Drawer	Number of feed retries in the 2nd Drawer
3rd Drawer	Number of feed retries in the 3rd Drawer
4th Drawer	Number of feed retries in the 4th Drawer
5th Drawer	Number of feed retries in the 5th Drawer
Dup	Number of feed retries in the Duplex Unit
LCT	Number of feed retries in the Large Capacity Cassette on C-301

<Clearing procedure>

- Using the ▼/▲ key, select the port to be cleared and press the Clear Key.

Note: If the count has been cleared accidentally, press the Interrupt Key to return the counter to the count it had before clearing.

● **Trouble**

Counts the number of malfunction occurrences in each section.

<Trouble 1/7>

Screen Display		Description
Code	Location	
C000X	Main Drive Motor	Main Drive Motor rotation malfunction
C0040/1	Suction Fan Motor	Suction Fan Motor rotation malfunction
C004A/b	Optical Cooling Fan Motor	Optical Cooling Fan Motor rotation malfunction
C004C/d	Ventilation Fan Motor	Ventilation Fan Motor rotation malfunction

<Trouble 2/7>

Screen Display		Description
Code	Location	
C0070/1	Main Hopper Motor	Main Hopper Toner Replenishing Motor rotation malfunction
C0072/3	Sub Hopper Motor	Sub Hopper Toner Replenishing Motor rotation malfunction
C0200	PC Charge Corona	Drum, Image Transfer, Paper Separator Corona malfunction
C0210	Image Transfer Corona	Not detected
C03XX	Control Board/Harness	Control Board, Harness malfunction

<Trouble 3/7>

Screen Display		Description
Code	Location	
C04XX	Exposure Lamp	Exposure Lamp ON malfunction
C050X	Fuser Warm-Up	Warming-up malfunction
C051X	Fuser Low Temp.	Abnormally low fusing temperature
C052X	Fuser High Temp.	Abnormally high fusing temperature
C060X	Scanner Drive System	Scanner Motor/SCP Board malfunction
C061X	Lens Drive System	Lens drive malfunction
C0620	Mirror Drive System	Mirror drive malfunction
C0650	Scanner Sensor	Scanner Reference Position Sensor malfunction

<Trouble 4/7>

Screen Display		Description
Code	Location	
C0660	Scanner System	Scanner load malfunction
C06FX	Scanner Interface	Scanner Interface malfunction
C090X	3rd Drawer	3rd Drawer malfunction (PF-101/PF-202)
C091X	2nd Drawer	2nd Drawer malfunction
C092X	1st Drawer	1st Drawer malfunction
C095X	4th Drawer	4th Drawer malfunction (PF-202)
C0990-6	LCC Main-Tray	PF-102 malfunction
C0998-d	LCC Shift System	PF-102 malfunction

<Trouble 5/7>

Screen Display		Description
Code	Location	
C09CX	LCT	C-301 malfunction
C0E0X	Main Erase Lamp	Main Erase Lamp ON malfunction
C0E20	Auxil. Erase Lamp	Image Erase Lamp ON malfunction
C0F02	Orig. Size Det. CPU	Original Size Detecting Board malfunction
C0F10	AE Sensor	AE Board malfunction
C0F2X	AIDC Sensor	AIDC Sensor malfunction
C0F3X	ATDC Sensor	ATDC Sensor malfunction

<Trouble 6/7>

Screen Display		Description
Code	Location	
C0F79	Paper Empty Sensor	PF-102 Paper Empty Sensor malfunction
C0FE/FX	Orig. Size Det. Sensor	Original Size Detecting Sensor malfunction
C0b0X	Sorter (Transport)	Sorter transport malfunction
C0b1X	Sorter (Chuck)	Sorter Chuck movement malfunction
C0b3X	Sorter (Guide)	Sorter Paper Aligning Motor malfunction
C0b5X	Sorter (Stapler)	Stapler malfunction
C0b6X	Sorter (Bin Shift)	Bin movement malfunction

<Trouble 7/7>

Screen Display		Description
Code	Location	
C0b7X	Sorter (Puncher)	Punch hole malfunction
C0d00	Front/Rear Guide	Front/Rear Edge Guide operation malfunction
C0d20	Dup Storage	Gate operation malfunction
C0d5X	Dup Drive Motor	Duplex Unit Drive Motor malfunction

Note: For details of malfunctions, see the TROUBLESHOOTING Manual.

<Clearing procedure>

- Using the ▼/▲ key, select the count to be cleared and press the Clear Key.

Note: If the count has been cleared accidentally, press the Interrupt Key to return the counter to the count it had before clearing.

● Maintenance

Set the next maintenance time based on copy cycle count. The count is decreased by 1 per copy cycle. When the count reaches the setting, the Maintenance Call message and inspection code "M1" are displayed together.

Note: The Maintenance Call message is displayed or not displayed depending on the setting of "Maintenance Call" in the Tech. Rep. Choice mode.

Note: If the Maintenance Call message is displayed, the copy cycle can be continued and copy is not disabled.

Screen Display		
	Set	Count
Counter 1	XXXXXX	XXXXXX
Counter 2	XXXXXX	XXXXXX
Counter 3	XXXXXX	XXXXXX
Counter 4	XXXXXX	XXXXXX
Counter 5	XXXXXX	XXXXXX

<Setting procedure>

1. Using the ▼/ ► key, select the counter to be set (1 to 5).
2. Enter the value from the 10-key pad (max. six digits).

Note: To clear the counter, select the count to be cleared using the ▼/ ► key, and press the Clear Key. If the count has been cleared accidentally, press the Interrupt Key to return the counter to the count it had before clearing.

● Port/Option

Counts the frequency of use per port/option as reference data to be used by the Tech. Rep. in maintenance.

<Port/Option 1/3>

Screen Display	Description
Manual Feed	Number of sheets fed from the Manual Feed Section
1st Drawer	Number of sheets fed from the 1st Drawer
2nd Drawer	Number of sheets fed from the 2nd Drawer
3rd Drawer	Number of sheets fed from the 3rd Drawer
4th Drawer	Number of sheets fed from the 4th Drawer
5th Drawer	Number of sheets fed from the 5th Drawer

<Port/Option 2/3>

Screen Display	Description
LCT	Number of sheets fed from the Large Capacity Cassette on C-301
ADF	Number of sheets that passed the ADF Entry
ADF Rev.	Number of sheets that passed the ADF Turnover section
Dup	Number of paper take-up cycles in the Duplex Unit
Sorter	Number of sheets that passed through the Sorter
Stapler	Number of stapling cycles

<Port/Option 3/3>

Screen Display	Description
Puncher	Number of punching cycles
PC Drum	Value converted from the number of PC Drum revolutions into the number of A4 crosswise sheets fed
Starter	Number of sheets fed
Fusing Roller	Value converted from the number of Fusing Roller revolutions into the number of A4 crosswise sheets fed
Charge Wire	Value converted from the number of advance pulses into the number of sheets copied

Note: When the PF-102 Paper Feed Cabinet is fitted to the copier, the count is displayed as the 3rd Drawer.

Note: The counts of the PC Drum, Fusing Roller and Charge Wire are displayed on a 1000 sheet basis.

<Clearing procedure>

- Using the ▼/▲ key, select the count to be cleared and press the Clear Key.

Note: If the count has been cleared accidentally, press the Interrupt Key to return the counter to the count it had before clearing.

● Consumables

Set the life of the consumables. When the count which increases one per copy cycle reaches the set count, the Maintenance Call message and a code are displayed.

Note: Code display

Toner Collect: Code "M2", Copy Kit: Code "M4"

Note: The setting of Toner Collect should be 180K/80K for the copier with/without the Paper Feed Cabinet, and must not be greater than the above. Copy is disabled and the Tech. Rep. Call message displayed 5000 copy cycles after the count has reached the setting.

Note: "Copy Kit" depends on the setting of "Copy Kit Counter" in the Tech. Rep. Choice mode.

Screen Display		
	Set	Count
Toner Collect	XXXXXX	XXXXXX
Copy Kit	XXXXXX	XXXXXX

<Setting procedure>

1. Using the ▼/ ► key, select the counter to be set (1 to 5).
2. Enter the value from the 10-key pad (max. six digits).

Note: To clear the counter, select the count to be cleared using the ▼/ ► key, and press the Clear Key. If the count has been cleared accidentally, press the Interrupt Key to return the counter to the count it had before clearing.

<Clearing procedure>

- Using the ▼/▲ key, select the count to be cleared and press the Clear Key.

Note: If the count has been cleared accidentally, press the Interrupt Key to return the counter to the count it had before clearing.

- Maintenance Code Display Resetting Procedures -

● Code: M1

Displayed to indicate that the count of any Maintenance Counter has reached the set count.

<Resetting procedure>

1. Select "Count" in the Tech. Rep. mode and access the "Maintenance" screen.
2. Select the count that has reached the set count and press the Clear Key to clear the count.

● Code: M2

Displayed to indicate that the Toner Collect count of the Consumables Counter has reached the set count.

<Resetting procedure>

1. Select "Count" in the Tech. Rep. mode and access the "Consumables" screen.
2. Select the count of Toner Collect and press the Clear Key to clear the count.

● Code: M4

Displayed to indicate that the Copy Kit count of the Consumables Counter has reached the set count.

<Resetting procedure>

1. Select "Count" in the Tech. Rep. mode and access the "Consumables" screen.
2. Select the count of Copy Kit and press the Clear Key to clear the count.

● Auto CPU Reset

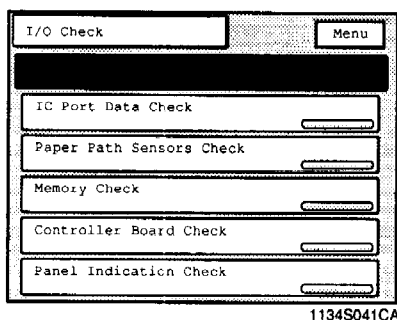
On detection of an incorrect operation due to noise, etc., the CPU deenergizes and energizes the Main Relay to prevent the occurrence of a malfunction. "1" or "0" is displayed to indicate whether an incorrect operation has occurred or not based on the locations of occurrences.

Screen Display	Description
MSC/Panel	PWB-B (MSC Board)
Master	PWB-A (Master Board)
SCP	PWB-J (SCP Board)
ADF	AFR-9
Sorter	S-205/ST-101/ST-206
Data Controller	D-102

Note: "1" indicates the occurrence of a malfunction and "0" no malfunction.

5. I/O Check

- This mode is used to check the Sensors and Boards at the occurrence of a jam or malfunction to determine the location of the fault.



5-1. I/O Check setting procedure

<Setting procedure>

1. Select "I/O Check".
2. Select the mode to be checked.
3. Check the mode and change data according to the screen selected.

5-2. Settings in the I/O Check mode

● IC Port Data Check

Shows the states of I/O ports in a machine stop state.

<Input ports>

= Input Port Data display: "L/H" =

Cause the sensor to be "not blocked" or "blocked" to display "H" or "L" as input port data according to the sensor state. This allows the sensor to be checked.

<Output ports>

= Output Port Data display: "0/1" =

Change the data of an output port from "0 to 1" or "1 to 0" with the "Change" key to make an operation check on the electrical part corresponding to that port. This allows the electrical part to be checked.

Note: Only the ports whose data may be changed are highlighted. 5 seconds after the data is changed, the port highlighted returns to the previous state. Two or more pieces of data cannot be changed together.

<IC Port Data 1/8>

IC No.	Port	Data							
		7	6	5	4	/	3	2	1 0
PWB-A (IC1A)	P47-0	1	H	1	1		L	*	* *
	P57-0	H	1	0	1		0	1	1 1
	P67-0	0	0	0	1		H	H	L 1
	P87-0	1	*	L	*		1	*	H *
PWB-A (IC4A)	APA7-0	1	1	1	1		1	1	1 1
	APB7-0	*	*	H	L		H	H	H L
	APC7-0	*	1	0	1		L	H	* H
	BPA7-0	1	1	1	1		1	1	* *

Note: "*" indicates either an unused or non-existing port.

<IC Port Data 2/8>

IC No.	Port	Data							
		7	6	5	4	/	3	2	1 0
PWB-A (IC4A)	BPB7-0	L	H	H	H		H	H	L H
	BPC7-0	H	L	L	L		H	H	H H
	O3-0	*	*	*	*		*	*	* *
PWB-A (IC5A)	APA7-0	*	*	L	L		L	L	* *
	APB7-0	H	H	H	L		H	L	H L
	APC7-0	H	H	H	L		1	1	1 1
	BPA7-0	1	1	0	0		1	0	1 *
	BPB7-0	L	L	H	*		*	*	* *

<IC Port Data 3/8>

IC No.	Port	Data							
		7	6	5	4	/	3	2	1 0
PWB-A (IC5A)	BPC7-0	1	1	1	1		*	*	* *
	O3-0	*	*	*	*		*	*	* *
PWB-F (4) (IC1F)	PB3-0/PA3-0	1	1	1	1		1	1	1 1
	PD3-0/PC3-0	*	*	H	H		L	L	H H
	PF3-0/PE3-0	H	H	1	1		H	H	0 0
	PH3-0/PG3-0	*	*	0	0		L	H	H L
PWB-A (200) (IC1A)	PB3-0/PA3-0	1	*	1	1		1	1	1 1
	PD3-0/PC3-0	*	*	H	L		H	H	L L

Note: 200 indicates the PF-202.

<IC Port Data 4/8>

IC No.	Port	Data								
		3	2	1	0	/	3	2	1	0
PWB-A (200) (IC1A)	PF3-0/PE3-0	L	L	0	0		H	L	0	0
	PH3-0/PG3-0	*	*	0	0		L	L	0	0
PWB-A (200) (IC2A)	PB3-0/PA3-0	H	L	L	H		L	L	*	*
	PD3-0/PC3-0	*	*	*	*		L	*	*	*
	PF3-0/PE3-0	*	*	*	*		*	*	*	*
	PH3-0/PG3-0	*	*	*	*		*	*	*	*
PWB-A (100) (IC1A)	PB3-0/PA3-0	1	*	*	*		*	*	*	*
	PD3-0/PC3-0	*	*	*	*		H	*	*	*

<IC Port Data 5/8>

IC No.	Port	Data								
		3	2	1	0	/	3	2	1	0
PWB-A (100) (IC1A)	PF3-0/PE3-0	*	*	*	*		*	L	*	*
	PH3-0/PG3-0	*	*	0	0		*	*	0	0
PWB-A (100) (IC2A)	PB3-0/PA3-0	*	L	H	H		L	H	*	*
	PD3-0/PC3-0	*	*	*	*		L	*	*	*
	PF3-0/PE3-0	*	*	*	*		*	*	*	*
	PH3-0/PG3-0	*	*	*	*		*	*	*	*
PWB-A (400) (IC2A)	PB3-0/PA3-0	1	*	1	*		1	1	1	1
	PD3-0/PC3-0	*	*	H	L		H	H	*	L

Note: 400 indicates the PF-102.

<IC Port Data 6/8>

IC No.	Port	Data								
		3	2	1	0	/	3	2	1	0
PWB-A (400) (IC1A)	PF3-0/PE3-0	H	H	0	0		H	L	*	*
	PH3-0/PG3-0	*	*	0	0		L	L	0	0
PWB-A (400) (IC2A)	PB3-0/PA3-0	*	L	L	H		H	L	1	1
	PD3-0/PC3-0	*	*	H	*		L	H	H	L
	PF3-0/PE3-0	*	*	*	*		*	*	*	*
	PH3-0/PG3-0	*	*	*	*		*	*	*	*
PWB-G (Dup) (IC1G)	PB3-0/PA3-0	1	1	*	*		1	*	1	1
	PD3-0/PC3-0	*	*	*	*		L	H	H	H

Note: Dup indicates the AD-5.

<IC Port Data 7/8>

IC No.	Port	Data									
		3	2	1	0	/	3	2	1	0	
PWB-G (Dup) (IC1G)	PF3-0/PE3-0	0	0	0	0		*	*	H	L	
	PH3-0/PG3-0	*	*	1	1		0	0	0	0	
PWB-A (C) (IC1A)	PB3-0/PA3-0	1	*	*	*		*	*	*	*	
	PD3-0/PC3-0	*	*	*	*		*	L	*	H	
	PF3-0/PE3-0	*	*	*	*		*	*	*	*	
	PH3-0/PG3-0	*	*	0	*		*	*	0	0	
PWB-A (LCC) (IC1A)	PB3-0/PA3-0	*	*	*	*		*	0	0	1	
	PD3-0/PC3-0	*	*	*	*		*	L	H	L	

Note: C indicates the 100-Sheet Feed Drawer.

LCC indicates the C-301.

<IC Port Data 8/8>

IC No.	Port	Data								
		3	2	1	0	/	3	2	1	0
PWB-A (LCC) (IC1A)	PF3-0/PE3-0	*	*	*	*		*	*	0	0
	PH3-0/PG3-0	*	*	1	1		H	L	H	L

● Paper Path Sensors Check

The passage of paper causes the states of the Paper Path Sensors to be switched from "1 to 0" or "0 to 1" in order of paper passage. This allows checking whether the Sensors are "normal" or "faulty".

Screen Display	Sensor Name
1 1st Feed	1st Drawer Paper Take-Up Sensor (PC56)
2 2nd Feed	2nd Drawer Paper Take-Up Sensor (PC57)
3 3rd Feed	3rd Drawer Paper Take-Up Sensor (PC21)
4 4th Feed	4th Drawer Paper Take-Up Sensor (PC29)
5 1st Vertical	1st Drawer Vertical Transport Sensor (PC63)
6 2nd Vertical	2nd Drawer Vertical Transport Sensor (PC64)
7 3rd Vertical	Vertical Transport Sensor 3 (PC17)
8 4th Vertical	Vertical Transport Sensor 4 (PC22)
9 Trans. Roller	Transport Roller Sensor (PC54)
10 Leading Edge	Paper Leading Edge Detecting Sensor (PC55)
11 Exit Section	Paper Exit Switch (S53)
12 Turnover	Duplex Unit Turnover Path Sensor (PC13)
13 Dup Entrance	Duplex Unit Paper Entry Sensor (PC14)
14 Dup Exit	Duplex Unit Paper Take-Up Sensor (PC16)

Note: "0": Paper present, "1": Paper absent

<Setting procedure>

- Select the paper path (Drawer/Duplex Unit) to be checked, enter this mode, and press the Start Key.

Note: When "Auto Paper" has been selected, paper is not passed (the check is not made).

● Memory Check

Used to check whether the ROM/RAM on the PWB-B Board (MSC Board) is accessed properly or not.

Check Result	Screen Display	Action
Normal	"Memory check completed. Turn the Power Switch OFF, and then ON.	The Power Switch must be turned OFF and ON.
Faulty	"ROM ERROR"	Change PWB-B (IC2B).
	"Message ROM ERROR"	Change PWB-B (IC4B).
	"RAM ERROR"	Change the PWB-B Board.
	"VRAM ERROR"	Change the PWB-B Board.
	"LCDTC ERROR"	Change the PWB-B Board.

<Setting procedure>

- Selecting this mode automatically puts the copier in the Memory Check mode.

Note: For the screen displayed after completion of the check, see the above table.

● Controller Board Check

Used to make a self-diagnostic check on the PWB-A (Master Board).

Check Result	Screen Display	Action
Normal	"Board Check mode highlighted returns to the previous state."	None
Faulty	"Malfunction code C03XX is displayed."	Change the PWB-A Board.

<Setting procedure>

- Selecting this mode automatically puts the copier in the Controller Board Check mode.

Note: For the screen displayed after completion of the check, see the above table.

● Panel Indication Check

Used to check the Control Panel LEDs and screen (liquid crystal).

<Setting procedure>

1. When this mode is selected, the LEDs which are all ON are turned OFF in the following sequence. When all the LEDs are turned OFF, they are turned ON again in the same sequence.



2. Checkered patterns appear on the screen (liquid crystal).
3. Select individual patterns. If the pattern displayed on the screen is switched from white to black or from black to white, it is judged that the corresponding liquid crystal is normal.

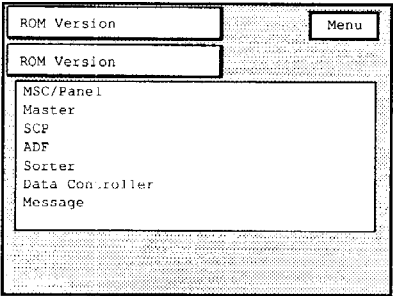
6. Last Trouble

- Displays the copy mode in which the most recent malfunction occurred.

Item	Description
Copy paper	APS, paper size
Zoom ratio	AMS, zoom ratio
Image density	AE, Manual Exposure
Copy cycle	Copy cycle
Original copy mode	1-sided → 2-sided, 2-sided → 2-sided, etc., Mixed Original Detection mode, Book mode
Sort mode	Sort, Non-sort, Group, Staple, Punch
Cover mode	Front cover, back cover, copied cover, not copied
Insertion mode	Copied insert, non-copied
OHP Interleaving mode	Copied interleave, non-copied
File Margin mode	Margin function, margin position, margin width
Erase mode	Erase function, erase position, erase width

7. ROM Version

- Displays the current ROM version loaded in the system.



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Screen Display	Description
MSC/Panel	PWB-B (IC2B)
Master	PWB-A (IC2A)
SCP	PWB-J (IC1J)
ADF	PWB-A (IC3A)
Sorter	S-205 PWB-A (IC3A) ST-101 PWB-A (IC3A) ST-206 PWB-A (IC3A)
Data Controller	D-102 (IC2)
Message	PWB-B (IC4B)

Note: The ST-101 may only be fitted to the EP3050.

8. RD Mode

- Select this mode when the copier is fitted with the DT-103.

RD Mode Menu

End of normal data trans.

ID Code *****

DT Setting Initial Transmission

Data Save Call Completion

Data Load Counter Clear

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<Setting procedure>

- With this screen displayed, enter the ID Code from the 10-key pad (seven digits).

8-1. Settings in the RD mode

● DT Setting

When the copier is fitted with the DT-103, make the necessary settings.

RD Mode Menu

DT Setting

CT-ID

DT-ID

TEL No.

Next

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RD Mode BackUp Menu

DT Setting

Dial Mode	Tone
Auto Receive	YES
RAM Clear	YES

Change

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<Setting procedure>

1. Select CT-ID and enter the center ID from the 10-key pad (four digits).
2. Select DT-ID and enter the data terminal ID from the 10-key pad (six digits).
3. Select TEL No. and enter the telephone number of the Center from the 10-key pad.

Note: When the office extension and outside line use different systems, enter "p" (for a "pulse" telephone line) or "t" (for a "tone" telephone line) with the Stop Key before entering the telephone number.

Note: Enter a pause or wait code according to the time required for switching from the extension line to the outside line, which depends on the type of office system used:
Switching time = less than 3 seconds → Use the Interrupt Key to enter the pause code "—".
Switching time = more than 3 seconds → Use the Energy Saver Key to enter the wait code "w".

4. Press the "Next" key.
5. Select "Dial Mode" and set the Dial Mode with the "Change" key according to the type of the telephone line used.

Pulse line	P10/P20
Tone line	Tone

6. Select "Auto Receive" and specify "Yes" or "No" using the "Change" key.

Yes	There is a DT-103 dedicated line.
No	There is no DT-103 dedicated line.

Note: When there is no DT-103 dedicated line, specify "No".

7. Select "RAM Clear" and select "No" using the "Change" key.

Yes	To make setting again.
No	Normal setting

Note: Select "Yes" to change CT-ID or DT-ID after completion of the set-up. If "Yes" is not selected, the setting cannot be changed.

- **Data Save**
Used to transmit the User's Choice/Tech. Rep. Choice settings to the Center.
- **Data Load**
Used to return the Choice settings transmitted to the Center by Data Save.
- **Initial Transmission**
Used when the DT-103 has been set up to give a transmission command from the Data Terminal to the Center to check the communication status.
Any of the following messages is displayed according to the communication status:

Message Displayed	
End of normal data trans.	Connection failed.
Line is busy.	DT modem error.
Not answering.	Connected.
Max. trial number reached.	

- **Call Completion**
Notifies the Center that the maintenance of the machine is complete.

- Counter Clear

Used to clear the Spare Counter to be cleared.

RD Mode				Menu	
SpareCounter Clear					
1	2	3	4	5	
6	7	8	9	10	
11	12	13	14	15	
16	17	18	19	20	

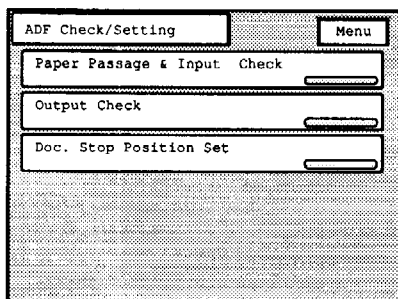
1134S055CA

<Setting procedure>

- Selecting the Counter to be cleared clears the selected Counter.

9. ADF Check/Setting

- This mode is used to check the operation of the Automatic/Duplexing Document Feeder and to adjust the document stop position in each mode.



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9-1. ADF Check/Setting setting procedure

<Setting procedure>

1. Select "ADF Check/Setting".
2. Select the mode to be checked/set.
3. Make the check or adjustment in the corresponding mode according to the screen selected.

9-2. Settings in the ADF Check/Setting mode

● Paper Passage & Input Check

The results of the Paper Passage Check and Sensor Check of the document path in each mode are indicated by "1/0".

Sensor
Empty Sensor (PC2)
Register Sensor (PC1)
Exit Sensor (PC8)
Width Sensor A (PC9)
Width Sensor B (PC10)
Width Sensor C (PC11)
Pick-Up Sensor A (PC3)
Pick-Up Sensor B (PC4)

Note: "1" indicates that paper is present and "0" that paper is absent except for the Pick-Up Sensors A, B where "1" indicates that the Sensor is unblocked and "0" that it is blocked.

<Setting procedure>

1. On the Paper Passage Check screen, select the mode to be checked.
2. Press the "Next" key to access the Input Check screen, load paper onto the Automatic/Duplexing Document Feeder, and press the Start Key.
3. According to the mode selected, make sure that "1/0" changes in order of the paper passage.

● Output Check

Used to check the operations of the Motors and Solenoids as single parts.

Screen Display	Part Name
M1	Pick-Up Motor
M2	Paper Take-Up Motor
M3	Main Drive Motor

Screen Display	Part Name
M4	Turnover/Exit Motor
SL1	Scale Solenoid
SL2	Turnover Solenoid

<Setting procedure>

- Select the part to be checked for operation and press the Start Key.

● Doc. Stop Position Set

Used to adjust the document stop position in each mode.

- 1-Sided -

Used to adjust the stop position of 1-sided documents when the Automatic/Duplexing Document Feeder is used on the copier.

Setting	Description	Initial Setting
43	Approx. -7 mm	
44	Approx. -6 mm	
45	Approx. -5 mm	
46	Approx. -4 mm	
47	Approx. -3 mm	
48	Approx. -2 mm	
49	Approx. -1 mm	
50	Approx. 0 mm	*

Setting	Description	Initial Setting
51	Approx. +1 mm	
52	Approx. +2 mm	
53	Approx. +3 mm	
54	Approx. +4 mm	
55	Approx. +5 mm	
56	Approx. +6 mm	
57	Approx. +7 mm	
58	Approx. +8 mm	

Note: "43 to 49": Direction in which the document stop position overlaps the Original Scale

"51 to 58": Direction in which the document stop position moves away from the Original Scale

- 2-Sided -

Used to adjust the stop position of 2-sided documents when the Automatic/Duplexing Document Feeder is used on the copier.

Setting	Description	Initial Setting
43	Approx. -7 mm	
44	Approx. -6 mm	
45	Approx. -5 mm	
46	Approx. -4 mm	
47	Approx. -3 mm	
48	Approx. -2 mm	
49	Approx. -1 mm	
50	Approx. 0 mm	*

Setting	Description	Initial Setting
51	Approx. +1 mm	
52	Approx. +2 mm	
53	Approx. +3 mm	
54	Approx. +4 mm	
55	Approx. +5 mm	
56	Approx. +6 mm	
57	Approx. +7 mm	
58	Approx. +8 mm	

Note: "43 to 49": Direction in which the document stop position overlaps the Original Scale

"51 to 58": Direction in which the document stop position moves away from the Original Scale

- 2in1-

Used to adjust the stop position of 2-in-1 documents when the Automatic/Duplexing Document Feeder is used on the copier.

Setting	Description	Initial Setting
43	Approx. -7 mm	
44	Approx. -6 mm	
45	Approx. -5 mm	
46	Approx. -4 mm	
47	Approx. -3 mm	
48	Approx. -2 mm	
49	Approx. -1 mm	
50	Approx. 0 mm	*

Setting	Description	Initial Setting
51	Approx. +1 mm	
52	Approx. +2 mm	
53	Approx. +3 mm	
54	Approx. +4 mm	
55	Approx. +5 mm	
56	Approx. +6 mm	
57	Approx. +7 mm	
58	Approx. +8 mm	

Note: "43 to 49": Direction in which the document stop position overlaps the Original Scale

"51 to 58": Direction in which the document stop position moves away from the Original Scale

- 2in1 Doc. Spacing -

Used to adjust the spacing of 2-in-1 documents when the Automatic/Duplexing Document Feeder is used on the copier.

Setting	Description	Initial Setting
43	Approx. -7 mm	
44	Approx. -6 mm	
45	Approx. -5 mm	
46	Approx. -4 mm	
47	Approx. -3 mm	
48	Approx. -2 mm	
49	Approx. -1 mm	
50	Approx. 0 mm	*

Setting	Description	Initial Setting
51	Approx. +1 mm	
52	Approx. +2 mm	
53	Approx. +3 mm	
54	Approx. +4 mm	
55	Approx. +5 mm	
56	Approx. +6 mm	
57	Approx. +7 mm	
58	Approx. +8 mm	

Note: "43 to 49": Direction in which the document spacing decreases

"51 to 58": Direction in which the document spacing increases

<Setting procedure>

1. Using the ▼/▲ key, select the mode to be adjusted.
2. Using the ◀ / ▶ key, select the desired setting.

10. Level History

- This mode is used to display and set various level operating values to the operating status of the machine.

<Level History 1/2>

Screen Display		Variable Range	Increments	Description
ATDC Level	Set	2 to 254	2	Reference value of ATDC control
	Correction	1.0 to 9.0 (%)	0.5%	Current ATDC level
Vg Level	Initial	550 to 850 (V)	30V	Initial setting of grid voltage
	Current	550 to 850 (V)	30V	Correction value of grid voltage due to changes with time

<Level History 2/2>

Screen Display		Variable Range	Increments	Description
Fuser Temp.	Set	190 to 210 (°C)	10°C	Target value of fuser temperature
	Current	160 to 230 (°C)	10°C	Current fuser temperature
Expo. Level	Initial	49 to 71 (V)	1V	Initial setting of Exposure Lamp level
	Current	49 to 71 (V)	1V	Correction value of Exposure Lamp voltage due to changes with time
Toner Replenishing Time		0 to 1270 (minutes)	10 minutes	Cumulative time of toner replenishment

NOTE

Values may be entered into only "ATDC Level - Set" and "Fuser Temp. - Set". The other level histories are only displayed for your reference.

= ATDC level reference value =

When the PWB-R (RAM Board) is changed or the P/C Unit from another machine is used, enter the ATDC level reference value (given on the Label found inside the Front Door).

= Fuser temperature setting =

When a fusing malfunction occurs frequently due to the environment or paper used, adjust the fuser temperature setting to prevent the fuser malfunction.

<Setting procedure>

1. Select the mode to be set.
2. Using the ◀ / ▶ key, select the desired setting.


11. Machine Status

- This mode is used to display up to five codes of isolated malfunctions that have occurred. The following malfunctions are detected as isolated malfunctions.


Malfunction Code		Description
C01	00	Charge Wire advance malfunction
C03	50 to 54 70/74	Control Board, Harness malfunction
C09	XX	Paper feed malfunction
C0F	02	Original size detection malfunction
C0F	20 to 23	AIDC Sensor malfunction
C0F	30/31	ATDC Sensor malfunction
C0F	7X	Paper Empty Sensor malfunction
C0F	E1 to FF	Original Size Detecting Sensor malfunction
C0b	10 to 13, 30, 51, 60 to 64, 70, 71	Sorter malfunction
C0d	XX	Duplex Unit malfunction

Note 1: Up to five isolated malfunction codes are displayed. When the sixth isolated malfunction is detected or when an isolated malfunction is detected at any paper source other than the Manual Feed Section, the corresponding ordinary malfunction code is displayed and copy is disabled.

Note 2: The isolated malfunctions corresponding to codes C0bXX (Sorter Trouble) are displayed in the form of the following pictorial symbols, not in the form of malfunction codes. The malfunctions corresponding to codes C0b10 to 13, 51 and 70 are treated as isolated malfunctions when detected during initial operation and as ordinary malfunctions when detected during a copy cycle.

C0b10 to 13/30/60 to 64 :  1134M071AA

C0b51 :  1134M072AA

C0b70, 71 :  1134M073AA

<Clearing procedure>

- With the Machine Status screen being displayed, swing open/close the Front Door to clear all the isolated malfunction codes being displayed.

Note: For C0F02/C0FE1 to FF and C0bXX, turn the Power Switch OFF and ON to clear the isolated malfunction codes.

12. Administrator Mode

- This mode is used to set the administrator number in addition to the functions on "Menu Screen 6/6" in the User's Choice mode.

Administrator Mode Menu

Select a function by pressing the key.

Copy Track: OFF [Slider]

User Help: [Slider]

Max. Copy Sets: OFF [Slider]

Administrator # Input: [Input Field]

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- Copy Track
 - User Help
 - Max. Copy Sets
- *: For these functions, see "Menu Screen 6/6" in the User's Choice Mode.

- Administrator # Input

Used to set the administrator number required to make any of the above settings on "Menu Screen 6/6" in the User's Choice Mode. (Identification number setting for opening the screen)

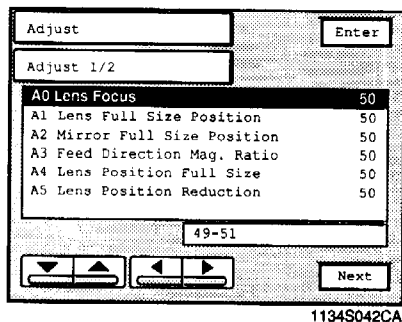
<Setting procedure>

- Enter the number from the 10-key pad (max. four digits).

5 ADJUST MODE

- This mode is used to adjust the optical components before shipment from the factory and must not be executed except when the PWB-R (RAM Board) has been changed. When the PWB-R has been changed, enter the factory settings indicated on the Label inside the Front Door.

5-1. Adjust Mode Screens



Adjust [] [Enter]

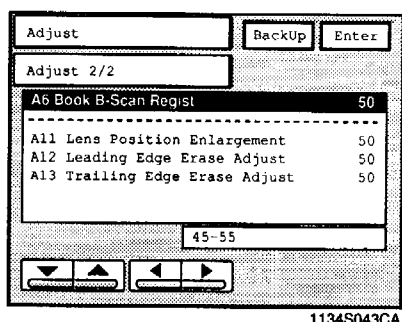
Adjust 1/2

A0 Lens Focus	50
A1 Lens Full Size Position	50
A2 Mirror Full Size Position	50
A3 Feed Direction Mag. Ratio	50
A4 Lens Position Full Size	50
A5 Lens Position Reduction	50

49-51

[Left] [Right] [Next]

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Adjust [] [BackUp] [Enter]

Adjust 2/2

A6 Book B-Scan Regist	50

A11 Lens Position Enlargement	50
A12 Leading Edge Erase Adjust	50
A13 Trailing Edge Erase Adjust	50

45-55

[Left] [Right]

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5-2. Adjust Mode Setting Procedure

<Setting Procedure>

1. Place the copier in the Tech. Rep. mode by pressing the following Keys.

[Stop Key] → [“0”] → [Stop Key] [“1”]

2. Then, place the copier in the Adjust Mode with the following Keys.

[Stop Key] → [Start Key]

3. Make various settings according to the screen selected.
4. Using the ▼/▲ key, select the function of the Adjust Mode to be set.

Note: Press the “Next” or “Back Up” key to switch the screen from one to the other.

5. Using the ◀ / ▶ key, select the setting.
6. Press “Enter” to enter the setting.

Note: In regard to A0 and A1 after pressing Enter Key, setting is completed by turning the Power switch OFF and ON.

<Leaving the Mode>

- Press the Panel Reset Key.

5-3. Settings in the Adjust Mode

- Lens Focal Length Adjustment (A-0)
Corrects the focal length of the Lens.

Setting	Description	Initial Setting
49	Short focal length adjustment	
50	Standard	*
51	Long focal length adjustment	

- Lens Full Size Position Adjustment (A-1)
Adjusts the magnification ratio in the crosswise direction by finely adjusting the Lens home position.

Setting	Description	Initial Setting
43	± 0 steps	
44	+2 steps	
45	+4 steps	
46	+6 steps	
47	+8 steps	
48	+10 steps	
49	+12 steps	
50	+14 steps	*

Setting	Description	Initial Setting
51	+16 steps	
52	+18 steps	
53	+20 steps	
54	+22 steps	
55	+24 steps	
56	+26 steps	
57	+28 steps	
58	+30 steps	

● Mirror Full Size Position Adjustment (A-2)

Corrects the optical length of the Mirror in response to the Lens Focal Length Adjustment.

Setting	Description	Initial Setting
43	±0 steps	
44	+3 steps	
45	+6 steps	
46	+9 steps	
47	+12 steps	
48	+15 steps	
49	+18 steps	
50	+21 steps	*

Setting	Description	Initial Setting
51	+24 steps	
52	+27 steps	
53	+30 steps	
54	+33 steps	
55	+36 steps	
56	+39 steps	
57	+42 steps	
58	+45 steps	

● Feeding Direction Magnification Ratio Adjustment (A-3)

Adjusts the magnification ratio in the feeding direction by finely adjusting the scan speed.

Setting	Description	Initial Setting
46	-16/1000	
47	-12/1000	
48	-8/1000	
49	-4/1000	
50	±0	*

Setting	Description	Initial Setting
51	+4/1000	
52	+8/1000	
53	+12/1000	
54	+16/1000	

● Lens Position Full Size Registration (A-4)

Adjusts the leading edge for a full size copy by changing the engagement timing of the Synchronizing Roller.

Setting	Description	Initial Setting
40	-10 pulses	
41	-9 pulses	
42	-8 pulses	
43	-7 pulses	
44	-6 pulses	
45	-5 pulses	
46	-4 pulses	
47	-3 pulses	
48	-2 pulses	
49	-1 pulse	
50	± 0	*

Setting	Description	Initial Setting
51	+1 pulse	
52	+2 pulses	
53	+3 pulses	
54	+4 pulses	
55	+5 pulses	
56	+6 pulses	
57	+7 pulses	
58	+8 pulses	
59	+9 pulses	
60	+10 pulses	

Note: Increments: Approx. 0.4 mm/1 pulse

● Lens Position Reduction Registration (A-5)

Adjust the leading edge for a reduction copy by changing the engagement timing of the Synchronizing Roller.

Setting	Description	Initial Setting
40	-10 pulses	
41	-9 pulses	
42	-8 pulses	
43	-7 pulses	
44	-6 pulses	
45	-5 pulses	
46	-4 pulses	
47	-3 pulses	
48	-2 pulses	
49	-1 pulse	
50	±0	*

Setting	Description	Initial Setting
51	+1 pulse	
52	+2 pulses	
53	+3 pulses	
54	+4 pulses	
55	+5 pulses	
56	+6 pulses	
57	+7 pulses	
58	+8 pulses	
59	+9 pulses	
60	+10 pulses	

Note: Increments: Approx. 0.2 mm/1 pulse

● Book B Scan Registration (A-6)

Adjust Book Scan B by changing the engagement timing of the Synchronizing Roller.

Setting	Description	Initial Setting
45	-5 pulses	
46	-4 pulses	
47	-3 pulses	
48	-2 pulses	
49	-1 pulse	
50	±0 pulses	*

Setting	Description	Initial Setting
51	+1 pulse	
52	+2 pulses	
53	+3 pulses	
54	+4 pulses	
55	+5 pulses	

Note: Increments: Approx. 0.4 mm/1 pulse

● Lens Position Enlargement Registration (A-11)

Adjust the leading edge for a enlargement copy by changing the engagement timing of the Synchronizing Roller.

Setting	Description	Initial Setting
40	-10 pulses	
41	-9 pulses	
42	-8 pulses	
43	-7 pulses	
44	-6 pulses	
45	-5 pulses	
46	-4 pulses	
47	-3 pulses	
48	-2 pulses	
49	-1 pulse	
50	±0	*

Setting	Description	Initial Setting
51	+1 pulse	
52	+2 pulses	
53	+3 pulses	
54	+4 pulses	
55	+5 pulses	
56	+6 pulses	
57	+7 pulses	
58	+8 pulses	
59	+9 pulses	
60	+10 pulses	

Note: Increments: Approx. 0.8 mm/1 pulse

● Leading Edge Erase Adjustment (A-12)

Corrects the width of erase on the leading edge of an image by changing the ON timing of the Image Erase Lamp.

Setting	Description	Initial Setting
45	-5 mm	
46	-4 mm	
47	-3 mm	
48	-2 mm	
49	-1 mm	
50	±0 mm	*

Setting	Description	Initial Setting
51	+1 mm	
52	+2 mm	
53	+3 mm	
54	+4 mm	
55	+5 mm	

● Trailing Edge Erase Adjustment (A-13)

Corrects the width of erase on the trailing edge of an image by changing the ON timing of the Image Erase Lamp.

Setting	Description	Initial Setting
42	-8 mm	
43	-7 mm	
44	-6 mm	
45	-5 mm	
46	-4 mm	
47	-3 mm	
48	-2 mm	
49	-1 mm	
50	±0 mm	*

Setting	Description	Initial Setting
51	+1 mm	
52	+2 mm	
53	+3 mm	
54	+4 mm	
55	+5 mm	
56	+6 mm	
57	+7 mm	
58	+8 mm	

6 LIST OF SETTINGS TO BE MADE DUE TO PARTS REPLACEMENT

Parts Changed Setting Item	RAM Board	PC Drum	Starter	AIDC Sensor	ATDC Sensor	Original Size Detecting Sensor	Exposure Lamp	Drum Charge Corona Wire	Original Size Detecting Board
Copy Mode Program	O	—	—	—	—	—	—	—	—
User's Choice Mode	O	—	—	—	—	—	—	—	—
Tech. Rep. Mode	O	—	—	—	—	—	—	—	—
Adjust Mode	O	—	—	—	—	—	—	—	—
F5 Mode	O	O	—	O	—	—	O	—	—
F7 Mode	O	—	—	—	—	O	—	—	O
FF Mode	—	—	O	—	O	—	—	—	—
"PC Drum" in the Port/Option Counter cleared	—	O	—	—	—	—	—	—	—
"Starter" in the Port/Option Counter cleared	—	—	O	—	O	—	—	—	—
"Charge Wire" in the Port/Option Counter cleared	—	—	—	—	—	—	—	O	—
Initialize	O	—	—	—	—	—	—	—	—
Memory Clear	O	—	—	—	—	—	—	—	—

O: Setting made —: No setting

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1 INTRODUCTION

1-1. General Precautions

1. When servicing the copier with its covers removed, use utmost care to prevent your hands, clothing, and tools from being caught in revolving parts including the chains and gears. When servicing the copier with the Lower Rear Cover removed, be sure to install the jig.
2. Before attempting to replace parts and unplug connectors, make sure that the power cord of the copier has been unplugged from the wall outlet.
3. Never create a closed circuit across connector pins except those specified in the text and on the printed circuit.
4. When creating a closed circuit and measuring a voltage across connector pins specified in the text, be sure to use the green wire (GND).
5. When the user is using a word processor or personal computer from the wall outlet of the same line, take necessary steps to prevent the circuit breaker from opening due to overloads.
6. Keep all disassembled parts in good order and keep tools under control so that none will be lost or damaged.

1-2. How to Use This Book

1. If a component on a PWB or any other functional unit including a motor is defective, the text only instructs you to replace the whole PWB or functional unit and does not give troubleshooting procedure applicable within the defective unit.
2. All troubleshooting procedures contained herein assume that there are no breaks in the harnesses and cords and all connectors are plugged into the right positions.
3. For the removal procedures of covers and parts, see DIS/REASSEMBLY, ADJUSTMENT.
4. The troubleshooting procedures are given in the order of greater frequency of trouble or order of operation.
5. The procedures preclude possible malfunctions due to noise and other external causes.

1-3. Reading the Text

1. The paper transport failure troubleshooting procedures are given according to the symptom. First identify the location where the paper is present and start the procedure for that particular location. For malfunction troubleshooting, start with step 1 and onward.
2. Make checks in numerical order of the steps and, if an item is checked okay, go to the next step.

Pattern 1

Step	Check Item	Result	Action
1	Is --?	YES	Do this.
2	Go to step 2 if it checks okay.		

Pattern 2

Step	Check Item	Result	Action
1	Is --?	YES	Do this.
		NO	Check that.
2		Go to step 2 if it checks okay.	

3. Method for Checking the Control Parts with Loads

To check the Control parts easier and safer, this copier allows the Technical Representative to determine whether a control part is fully operational and signals are input and output properly by changing or checking the I/O port data of the board IC with the copier in the standby state (including where a misfeed, malfunction or setting fault condition exists).

Procedure

- 1) On the circuit diagram accompanying the text, locate the I/O port of the control part which is probably faulty when a misfeed or malfunction occurs.
- 2) Select the function "I/O Port Data" of "I/O Check" in the Tech. Rep. mode and call up the screen which contains the port identified in Step 1) above. (See the SWITCHES ON PWBs Section.)
- 3) Change or check the input or output port data to check that the control part is operational and signals are input and output properly.
- 4) If the control part does not operate after the output port data has been changed, select "Board Check" of "I/O Check" in the Tech. Rep. mode and determine whether the cause of the problem is the board or any other functional unit.

NOTE: Only the output ports given on page T-48, 49 may be checked by "Board Check" of "I/O Check" in the Tech. Rep. mode.

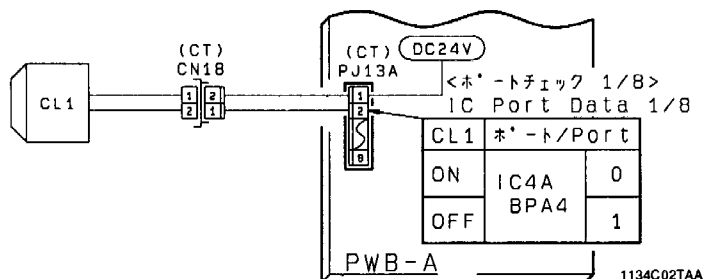
<Checking a Control Part with a load by changing the Output Port Data>

Example

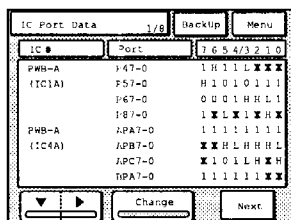
The Transport Roller Clutch (CL1) is probably faulty when a misfeed occurs at the Paper Take-Up Section of the copier.

• Procedure

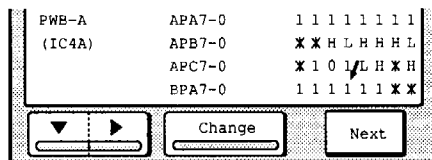
- 1) From the circuit diagram accompanying the text, the port for the CL1 energization/deenergization signal is identified as the BPA4 output port on PWB-A (IC4A).



- 2) Select "IC Port Data" of "I/O Check" in the Tech. Rep. mode (see the SWITCHES ON PWBs/TEST MODE Section), and call up the screen which contains the BPA4 output port on PWB-A (IC4A).



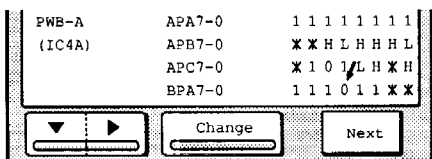
- 3) Highlight the on-the-screen data of BPA4 output port on PWB-A (IC4A) and make sure that the data is "1" (CL1: deenergized).



- 4) Touch the "Change" key on the screen to change the data from 1 to 0. At this time, CL1 is energized for approx. 5 seconds.

Normal: CL1 makes a sound.

Faulty: CL1 does not sound.



* As soon as the data is changed, the leftmost port whose data may be changed is highlighted.

2 PAPER TRANSPORT FAILURE

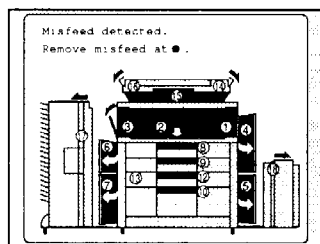
1. Paper Misfeed

When a paper misfeed occurs in the copier, the misfeed message, misfeed location and misfeed paper location are displayed on the Touch Panel.

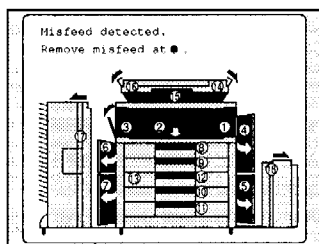
Blinking	Jam location
Lit	Paper location

<Inch Area>

<Metric Area>



1134T240EA



1134T241DA

*: When an option is installed

Blinking/Lit	Jam/Paper Location	Ref. Page	
①	Multi bypass take-up and transport	T-20 to 22	
②	Transport/Separator	T-16 to 19	
③	Fusing/Exit	T-23, 24	
④	Copier take-up/vertical transport	T-11 to 15	
④, ⑤	Paper Feed Cabinet take-up/vertical transport	T-25 to 31	*
⑥, ⑦	Duplex Unit vertical transport	T-32 to 39	*
⑧	1st Drawer take-up	T-11 to 13, T-15	
⑨	2nd Drawer take-up	T-11, 12, 14, 15	
⑩	3rd Drawer take-up	T-25 to 27, T-29 to 31	*
⑪	4th Drawer take-up (Metric Area)	T-25 to 28	*
⑫	Duplex Unit take-up	T-40 to 44	*
⑦, ⑬	Duplex Unit storage	T-32, 38, 39	*
⑭	Automatic/Duplexing Document Feeder take-up	—	*
⑮	Automatic/Duplexing Document Feeder transport	—	*
⑯	Automatic/Duplexing Document Feeder turnover/exit	—	*
⑰	Sorter	—	*
⑱	LCT	—	*

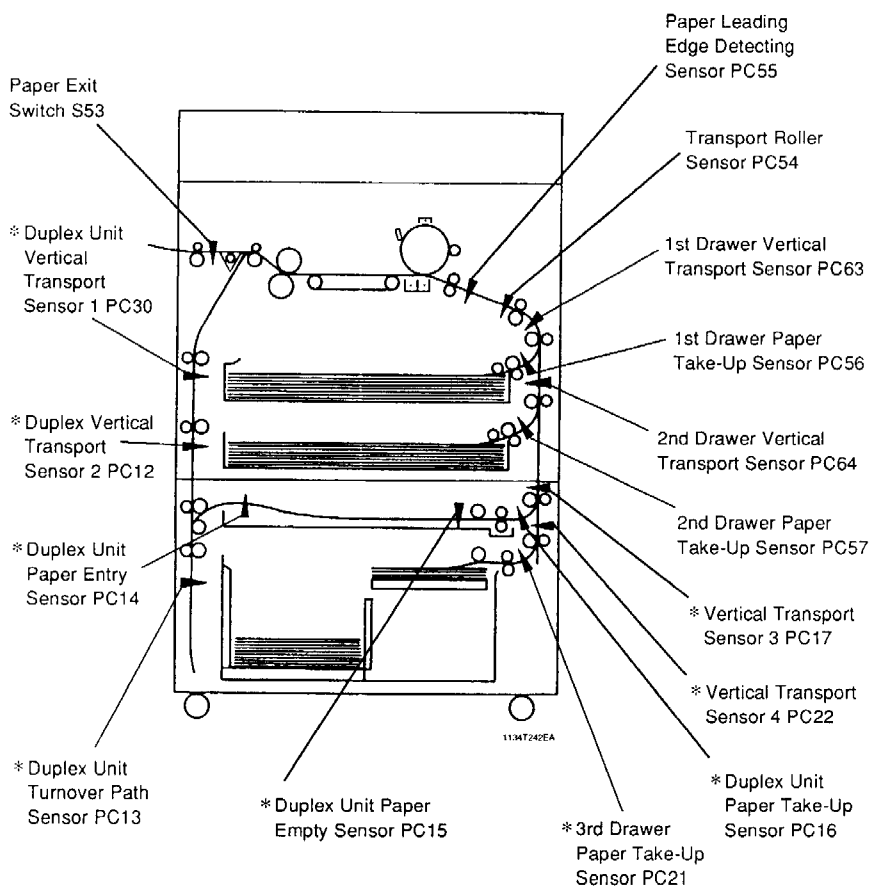
<Display resetting method>

Jam in the copier	Open/close the Front Door.
Jam in the option (except the Duplex Unit)	Open/close or re-connect the option.

Misfeed Detecting Sensors Layout

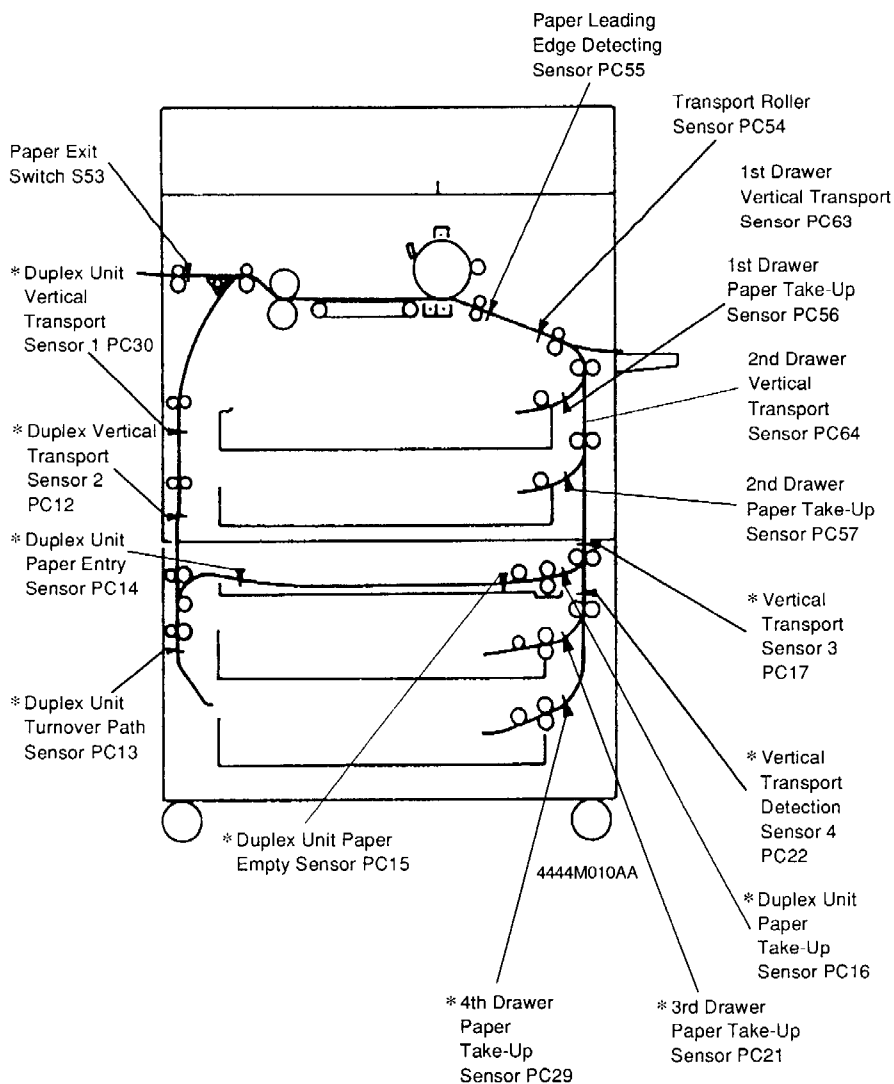
Inch Area

* : When an option is installed



Metric Area

* When an option is installed



2. Types of Misfeed Detection and Detection Timings

- The following table lists misfeed detection types and corresponding detection timings classified by misfeed locations.

<Paper Take-Up Misfeed>

Type	Detection Timing	
Paper take-up failure detection	The 1st Drawer Paper Take-Up Sensor PC56 is not blocked (L) approx. 2.93 sec. after the 1st Drawer Paper Take-Up Motor M11 is energized.	<p>M11 ON OFF</p> <p>PC56 H L</p> <p>2.93sec</p> <p>1134T01TAA</p>
	The 2nd Drawer Paper Take-Up Sensor PC57 is not blocked (L) approx. 2.93 sec. after the 2nd Drawer Paper Take-Up Motor M12 is energized.	<p>M12 ON OFF</p> <p>PC57 H L</p> <p>2.93sec</p> <p>1134T02TAA</p>
Paper take-up trailing edge detection	The 1st Drawer Paper Take-Up Sensor PC56 is not unblocked (H) "T" seconds (which depends on the paper size) after the 1st Drawer Vertical Transport Sensor PC63 is blocked (L).	<p>PC56 H L</p> <p>PC63 H L</p> <p>A4 crosswise : T=approx. 1 sec.</p> <p>1134T36TCB</p>
	The 2nd Drawer Paper Take-Up Sensor PC57 is not unblocked (H) "T" seconds (which depends on the paper size) after the 2nd Drawer Vertical Transport Sensor PC64 is blocked (L).	<p>PC57 H L</p> <p>PC64 H L</p> <p>A4 crosswise : T=approx. 1 sec.</p> <p>1134T37TCB</p>
Leading edge detection by Transport Roller Sensor PC54	The Transport Roller Sensor PC54 is not blocked (L) approx. 0.73 sec. after the 1st Drawer Vertical Transport Sensor PC63 is blocked (L).	<p>PC63 H L</p> <p>PC54 H L</p> <p>0.73sec</p> <p>1134T05TAA</p>
	The Transport Roller Sensor PC54 is not blocked (L) approx. 1.1 sec. after the 2nd Drawer Vertical Transport Sensor PC64 is blocked (L).	<p>PC64 H L</p> <p>PC54 H L</p> <p>1.1sec</p> <p>1134T06TAA</p>

<Multi Bypass Misfeed>

Type	Detection Timing	
Bypass paper take-up failure detection	The Transport Roller Sensor PC54 is not blocked (L) approx. 0.91 sec. after the Manual Feed Paper Take-Up Clutch CL3 is energized.	<p>CL3 ON OFF</p> <p>PC54 H L</p> <p>0.91sec</p> <p>1134T07TAA</p>

<Transport/Separator Misfeed>

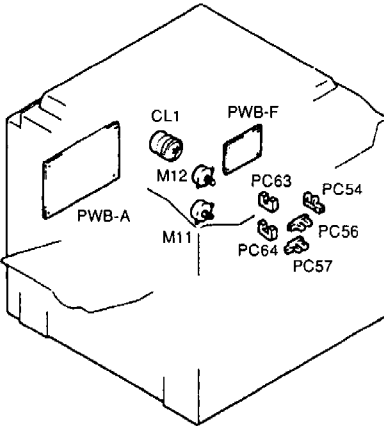
Type	Detection Timing	
Trailing edge detection by Transport Roller Sensor PC54	PC54 is not unblocked (H) "T" seconds (which depends on the paper size) after the TRON signal is input.	<p>TRON</p> <p>PC54 H L</p> <p>A3 lengthwise : T=approx. 1.7 sec.</p> <p>1134T38TGB</p>
Leading edge detection by Paper Leading Edge Detecting Sensor PC55	PC55 is not blocked (L) approx. within 0.48 sec. after the Transport Roller Sensor PC54 is blocked (L).	<p>PC54 H L</p> <p>PC55 H L</p> <p>0.48sec</p> <p>1134T09TAA</p>
Trailing edge detection by Paper Leading Edge Detecting Sensor PC55	PC55 is not unblocked (H) approx. within 0.38 sec. after the Transport Roller Sensor PC54 is unblocked (H).	<p>PC54 H L</p> <p>PC55 H L</p> <p>0.38sec</p> <p>1134T10TAA</p>

<Fusing/Exit Misfeed>

Type	Detection Timing	
Leading edge detection by Paper Exit Switch S53	S53 is not turned OFF (L) approx. 1.87 sec. after the TRON signal is input.	<p>TRON</p> <p>S53 ON OFF</p> <p>1.87sec</p> <p>1134T11TAA</p>
Trailing edge detection by Paper Exit Switch S53	S53 is not turned ON (H) approx. 1.99 sec. after the Paper Leading Edge Detecting Sensor PC55 is unblocked (H).	<p>PC55 H L</p> <p>S53 ON OFF</p> <p>1.99sec</p> <p>1134T12TAA</p>

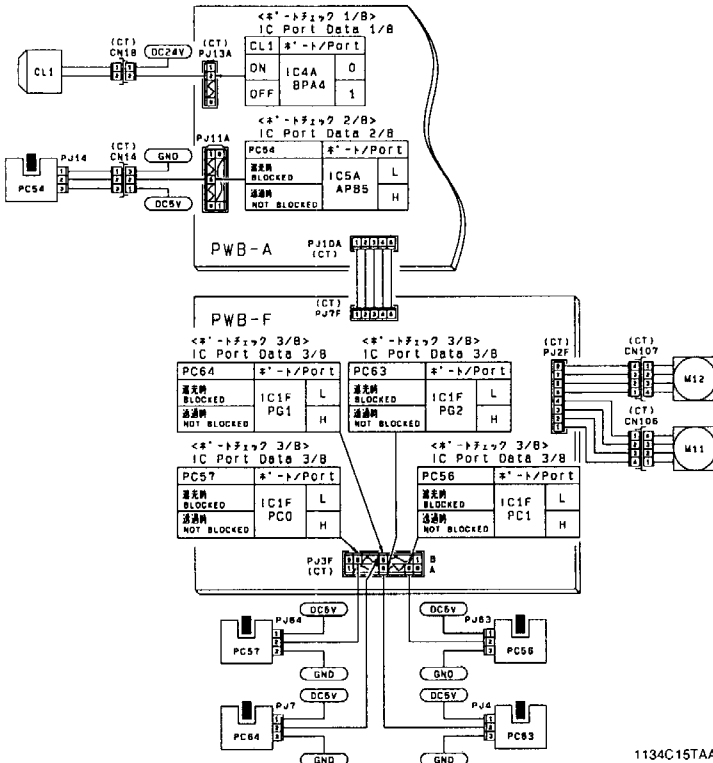
3. Misfeed Clearing Procedures

3-1. Copier Take-Up Misfeed



1134T112AA

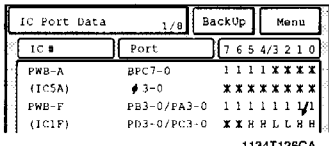
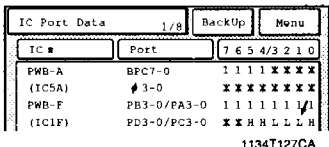
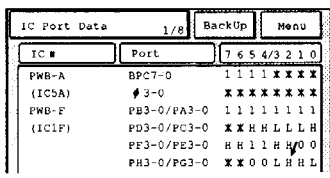
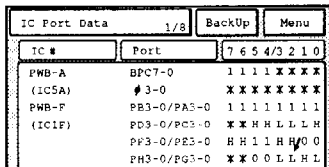
Symbol	Name
PC54	Transport Roller Sensor
PC56	1st Drawer Paper Take-Up Sensor
PC57	2nd Drawer Paper Take-Up Sensor
PC63	1st Drawer Vertical Transport Sensor
PC64	2nd Drawer Vertical Transport Sensor
M11	1st Drawer Paper Take-Up Motor
M12	2nd Drawer Paper Take-Up Motor
CL1	Transport Roller Clutch
PWB-F	S/P Board
PWB-A	Master Board

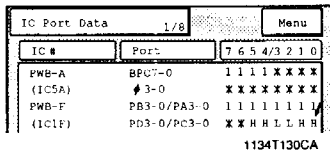
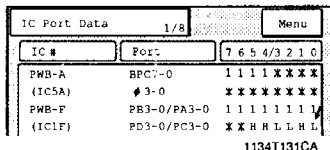
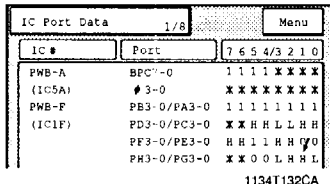
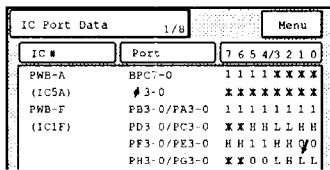


1134C15TAA

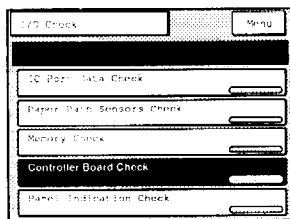
◆ Copier Take-Up Misfeed Clearing Procedure

Symptom	Step	Check Item	Result	Action
<ul style="list-style-type: none"> Paper is not taken up at all. Paper is at a stop before the Paper Take-Up Sensor. 	1	Does the paper being used meet product specifications?	NO	Instruct the user to use the paper that meets product specifications.
	2	Is the paper curled, wavy or damp?	YES	Change the paper. Instruct the user on the storage of paper.
	3	Does the Size (Length/Width) Guide position match the paper used?	NO	Change the Size Guide mounting position.
	4	Are the Paper Take-Up Roll and Paper Separator Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Take-Up Roll and/or Paper Separator Roll.
	5	Do the Paper Take-Up Motors M11, M12 rotate when the Start Key is turned ON?	NO	<ul style="list-style-type: none"> Change PWB-F or PWB-A. Check M11 and M12.
			YES	Check for overload.
<ul style="list-style-type: none"> Paper is at a stop in the Vertical Transport Section. 	1	Are the Vertical Transport Rollers deformed, worn, or dirty with paper dust?	YES	Change or clean the Vertical Transport Rollers.
	2	Is the Paper Take-Up or Vertical Transport Guide Plate deformed or dirty?	YES	Correct, change, or clean.
	3	<p>Check the operation of the Transport Roller Clutch CL1 as described below (see T-4):</p> <p>1) Make sure that the port is BPA4 on PWB-A (IC4A).</p> <p>2) Select "I/O Port Data".</p> <p>3) Is the data of BPA4 on PWB-A (IC4A) "1"?</p> <div> </div> <p>1134T125CA</p>	NO	Change PWB-A.
		4) By pressing the "Change" key to change the data from "1" to "0", does CL1 operates? (Check that CL1 makes a sound.)	YES	To Step 4 or 6.
		5) By making a "Board Check" via "I/O Check" in the Tech. Rep. mode, is the malfunction code "C0324" displayed?	YES	Change PWB-A.
			NO	Change CL1.

Symptom	Step	Check Item	Result	Action
	4	<p>When 1st Drawer is used Check the 1st Drawer Paper Take-Up Sensor PC56 as described below (see T-3):</p> <ol style="list-style-type: none"> 1) Make sure that the port is PC1 on PWB-F (IC1F). 2) Select "I/O Port Data". 3) Is the data of PC1 on PWB-F (IC1F) "H"?  <p>1134T128CA</p>	NO	Check the operation of the Actuator.
		<ol style="list-style-type: none"> 4) Operate the Actuator to block PC56. 5) Select "I/O Port Data" again. Has the data of PC1 on PWB-F (IC1F) changed from "H" to "L"?  <p>1134T127CA</p>	NO	Change PC56.
	5	<p>Check the 1st Drawer Vertical Transport Sensor PC63 as described below (see T-3):</p> <ol style="list-style-type: none"> 1) Make sure that the port is PG2 on PWB-F (IC1F). 2) Select "I/O Port Data". 3) Is the data of PG2 on PWB-F (IC1F) "H"?  <p>1134T128CA</p>	NO	Check the operation of the Actuator.
		<ol style="list-style-type: none"> 4) Operate the Actuator to block PC63. 5) Select "I/O Port Data" again. Has the data of PG2 on PWB-F (IC1F) changed from "H" to "L"?  <p>1134T129CA</p>	NO	Change PC63.
			YES	Change PWB-F or PWB-A.

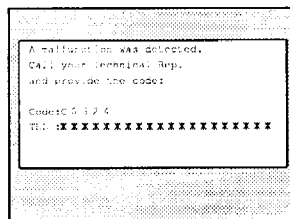
Symptom	Step	Check Item	Result	Action
	6	When 2nd Drawer is used Check the 2nd Drawer Paper Take-Up Sensor PC57 as described below (see T-3): 1) Make sure that the port is PC0 on PWB-F (IC1F). 2) Select "I/O Port Data".		
		3) Is the data of PC0 on PWB-F (IC1F) "H"? 	NO	Check the operation of the Actuator.
		4) Operate the Actuator to block PC57. 5) Select "I/O Port Data" again. Has the data of PC0 on PWB-F (IC1F) changed from "H" to "L"?		
			NO	Change PC57.
	7	Check the 2nd Drawer Vertical Transport Sensor PC64 as described below (see T-3): 1) Make sure that the port is PG1 on PWB-F (IC1F). 2) Select "I/O Port Data".		
		3) Is the data of PG1 on PWB-F (IC1F) "H"? 	NO	Check the operation of the Actuator.
		4) Operate the Actuator to block PC64. 5) Select "I/O Port Data" again. Has the data of PG1 on PWB-F (IC1F) changed from "H" to "L"?		
			NO	Change PC64.
			YES	Change PWB-F or PWB-A.

- 5) If CL1 did not operate, make a "Board Check" via "I/O Check" in the Tech. Rep. mode.



1134T224CB

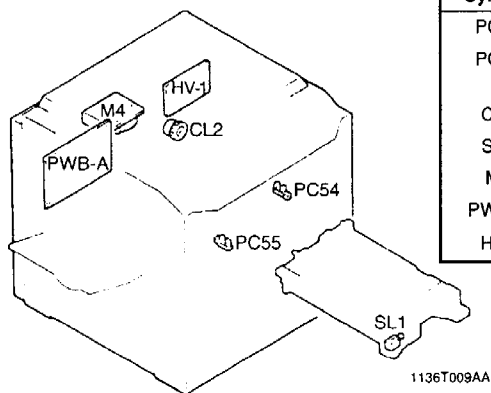
- 6) The following screen is displayed if PWB-A does not output the CL1 energization signal.



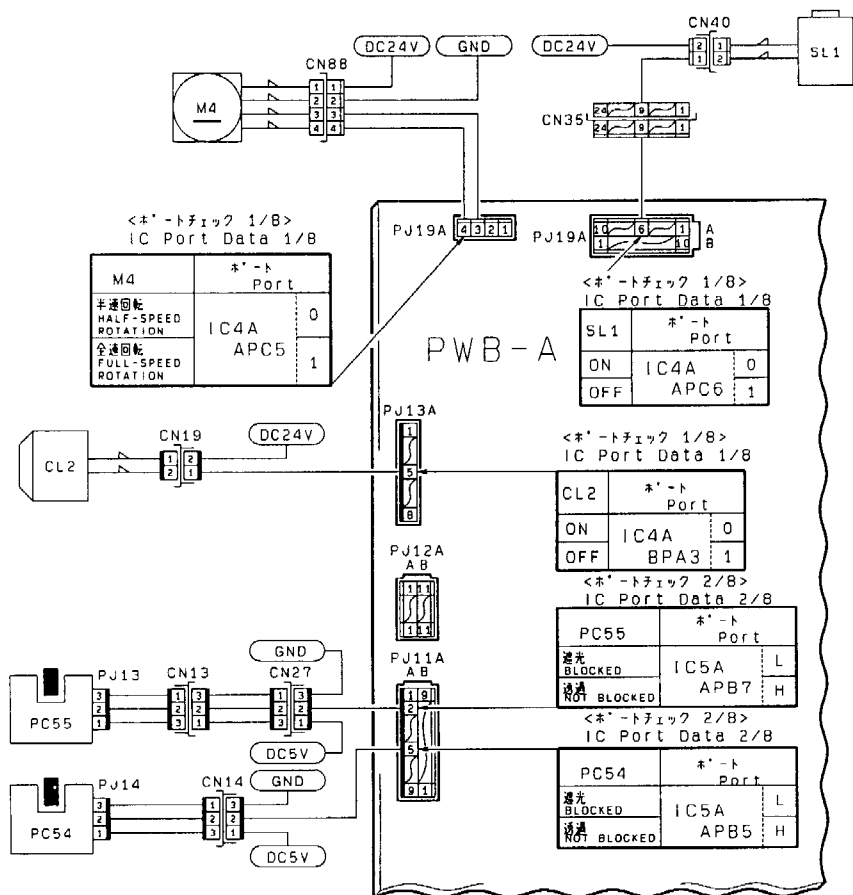
1134T227CB

* For the output signal-basis malfunction codes (C03**), see page T-48, 49.

3-2. Transport/Separator Misfeed

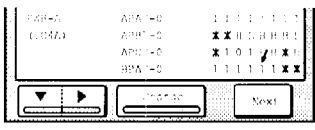


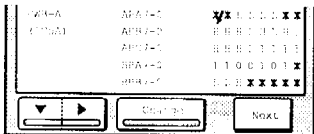
Symbol	Name
PC54	Transport Roller Sensor
PC55	Paper Leading Edge Detecting Sensor
CL2	Synchronizing Roller Clutch
SL1	Separator Solenoid
M4	Suction Fan Motor
PWB-A	Master Board
HV1	High Voltage Unit

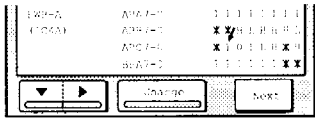
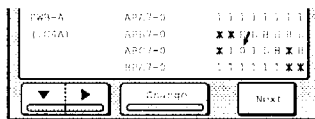


1134C03TAA

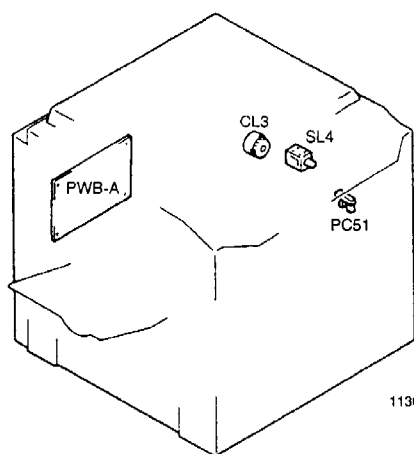
◆ Transport/Separator Misfeed Clearing Procedure

Symptom	Step	Check Item	Result	Action
• Paper is at a stop at the Synchronizing Roller.	1	Is the paper curled, wavy or damp?	YES	Change the paper. Instruct the user on the storage of paper.
	2	Check the operation of the Synchronizing Roller Clutch CL2 as described below (see T-4): 1) Make sure that the port is BPA3 on PWB-A (IC4A). 2) Select "I/O Port Data".		
		3) Is the data of BPA3 on PWB-A (IC4A) "1"?	NO	Change PWB-A.
		 1134T136CA		
		4) By pressing the "Change" key to change the data from "1" to "0", does CL2 operate? (Check that CL2 makes a sound.)	YES	To Step 3.
		5) By making a "Board Check" via "I/O Check" in the Tech. Rep. mode, is the malfunction code "C0325" displayed?	YES	Change PWB-A.
			NO	Change CL2.
	3	Is a given length of loop formed before the Synchronizing Roller?	NO	Adjust the paper loop length using Loop Length Adjustment (Drawer) in the Tech. Rep. mode.
	4	Refer to Step 3. on page T-13 and check the Transport Roller Sensor PC54.		
	5	Check the Paper Leading Edge Detecting Sensor PC55 as described below (see T-3): 1) Make sure that the port is APB7 on PWB-A (IC5A). 2) Select "I/O Port Data".		

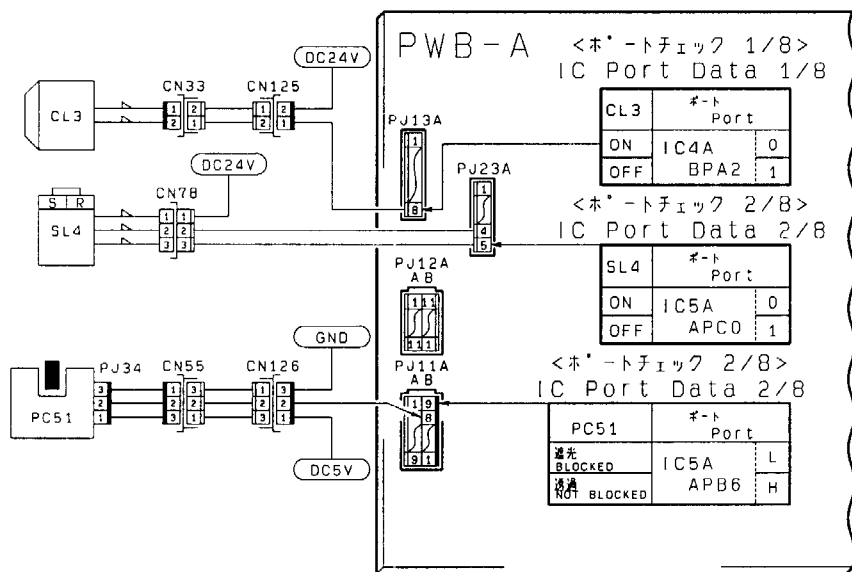
Symptom	Step	Check Item	Result	Action
	3)	Is the data of APB7 on PWB-A (IC5A) "H"?	NO	Check the operation of the Actuator.
		 1134T137CA		
	4)	Operate the Actuator with a sheet of paper to block PC55.		
	5)	Select "I/O Port Data" again. Has the data of APB7 on PWB-A (IC5A) changed from "H" to "L"?	NO	Change PC55.
<ul style="list-style-type: none"> Paper is at a stop near the PC Drum. 	1	Is the Pre-Image Transfer Guide Plate deformed or dirty?	YES	Correct, change or clean the Guide Plate.
		Are the Charge Corona Wires deteriorated or dirty?	YES	Clean the Wires or change the Coronas Unit.
		Is the Paper Guide above the Paper Separator Corona deformed or dirty?	YES	Change or clean the Paper Guide.
		Are the Synchronizing Rollers deformed, worn, or dirty with paper dust?	YES	Change or clean the Synchronizing Rollers.
		Check the Paper Separator Corona Remote signal from PWB-A.	YES	Change PWB-A.
	5	<ul style="list-style-type: none"> Does the malfunction code "C0322" appear when "Board Check" of "I/O Check" in the Tech. Rep. mode is made? 	NO	Change the High Voltage Unit (HV1) or Coronas Unit.
<ul style="list-style-type: none"> Paper is wedged at the Paper Separator Fingers. 	1	Check the operation of the Separator Solenoid SL1 (see T-4). 1) Make sure that the port is APC6 on PWB-A (IC4A). 2) Select "I/O Port Data".		

Symptom	Step	Check Item	Result	Action
		3) Is the data of APC6 on PWB-A (IC4A) "1"?  1134T139CA	NO	Change PWB-A.
		4) By pressing the "Change" key to change the data from "1" to "0", does SL1 operate? (Check that SL1 makes a sound.)	YES	To Step 2.
	2	By making a "Board Check" via "I/O Check" in the Tech. Rep. mode, is the malfunction code "C031F" displayed?	YES	Change PWB-A.
			NO	Change SL1.
	3	Are the Paper Separator Fingers deformed or dirty?	YES	Correct, change or clean the Paper Separator Fingers.
• Paper is at a stop on the Suction Belts.	1	When the Main Drive Motor is run, do the Suction Belts turn?	NO	Check the drive gear and timing belt.
		Check whether the Suction Fan Motor M4 is switched from half speed to full speed when the Start Key is turned ON (see T-4). 1) Make sure that the port is APC5 on PWB-A (IC4A). 2) Select "I/O Port Data".		
	2	3) Is the data of APC5 on PWB-A (IC4A) "0" when M4 is running at half speed?  1134T140CA	NO	Change PWB-A.
		4) By pressing the "Change" key to change the data from "0" to "1", is M4 switched from half speed to full speed?	YES	Check the Transport Belt.
	3	By making a "Board Check" via "I/O Check" in the Tech. Rep. mode, is the malfunction code "C0320" displayed?	YES	Change PWB-A.
			NO	Change M4.

3-3. Multi Bypass Misfeed

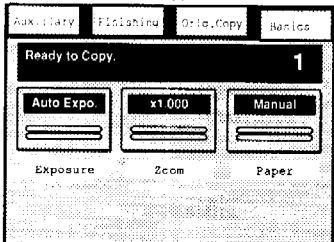
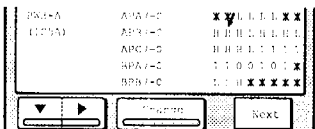


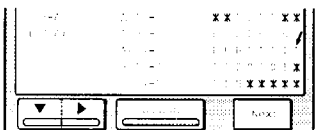
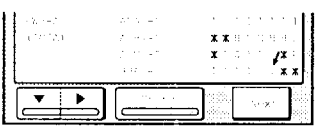
Symbol	Name
PC51	Manual Feed Paper Empty Sensor
SL4	Manual Feed Paper Take-Up Solenoid
CL3	Manual Feed Paper Take-Up Clutch
PWB-A	Master Board



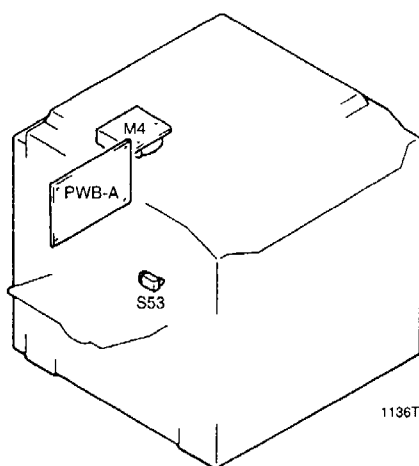
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◆ Multi Bypass Misteed Clearing Procedure

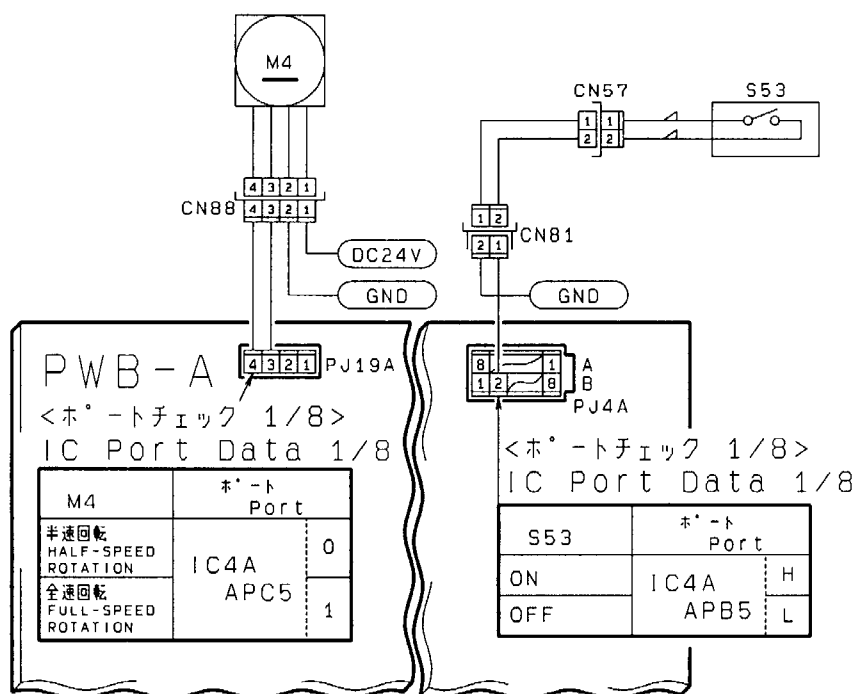
Symptom	Step	Check Item	Result	Action
• Paper is not taken up at all.	1	Is the following screen displayed on the Touch Panel when a sheet of paper is placed on the Multi Bypass Table.  1134T223CA	YES	To Step 3.
	2	Check the Manual Feed Paper Empty Sensor PC51 as described below (see T-3): 1) Make sure that the port is APB6 on PWB-A (IC5A). 2) Select "I/O Port Data". 3) Is the data of APB6 on PWB-A (IC5A) "H" with no paper placed?  1134T141CA	NO	Check the operation of the Actuator.
		4) Operate the Actuator with a sheet of paper to block PC51.		
		5) Select "I/O Port Data" again. Has the data of APB6 on PWB-A (IC5A) changed from "H" to "L"?	NO	Change PC51.
			YES	Change PWB-A.
	3	Does the paper being used meet product specifications?	NO	Instruct the user to use the paper that meets product specifications.
	4	Is the paper curled, wavy or damp?	YES	Change the paper. Instruct the user on the storage of paper.
	5	Check the operation (lowering the Paper Take-Up Rolls) of the Manual Feed Paper Take-Up Solenoid SL4 as described below (see T-4): 1) Make sure that the port is APC0 on PWB-A (IC5A). 2) Select "I/O Port Data".		

Symptom	Step	Check Item	Result	Action
		3) Is the data of APC0 on PWB-A (IC5A) "1"?  1134T142CA	NO	Change PWB-A.
		4) By pressing the "Change" key to change the data from "1" to "0", does SL4 operate to lower the Paper Take-Up Rolls?	YES	To Step 9.
	6	By making a "Board Check" via "I/O Check" in the Tech. Rep. mode, is the malfunction code "C0316" displayed?	YES	Change PWB-A.
			NO	Change SL4 or adjust its stroke.
	7	Check the operation of the Manual Feed Paper Take-Up Clutch CL3 as described below (see T-4): 1) Make sure that the port is BPA2 on PWB-A (IC4A). 2) Select "I/O Port Data". 3) Is the data of BPA2 on PWB-A (IC4A) "1"?  1134T143CB	NO	Change PWB-A.
		4) By pressing the "Change" key to change the data from "1" to "0", does CL3 operate? (Check that CL3 makes a sound.)	YES	To Step 9.
	8	By making a "Board Check" via "I/O Check" in the Tech. Rep. mode, is the malfunction code "C0326" displayed?	YES	Change PWB-A.
			NO	Change CL3.
	9	Are the Pressure Pad and Guide Plate deformed or dirty?	YES	Clean or change the Pressure Pad and Guide Plate.
	10	Are the Manual Feed Paper Take-Up Rolls deformed, worn, or dirty with paper dust?	YES	Clean or change the Manual Feed Take-Up Rolls.

3-4. Fusing/Exit Misfeed



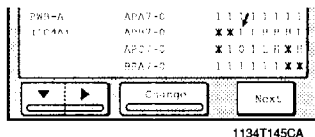
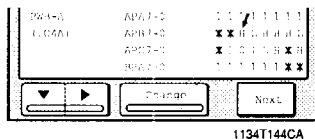
Symbol	Name
S53	Paper Exit Switch
M4	Suction Fan Motor
PWB-A	Master Board



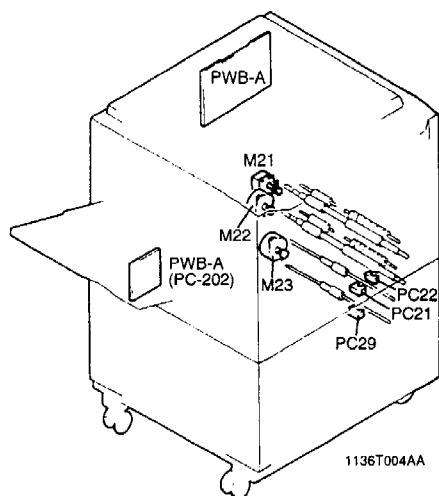
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◆ Fusing/Exit Mismatch Clearing Procedure

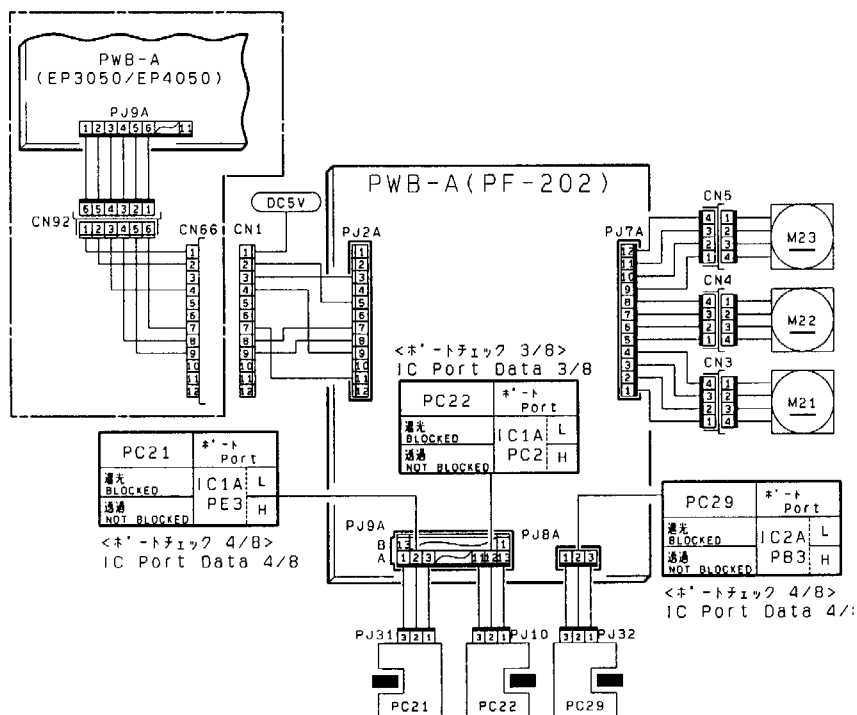
Symptom	Step	Check Item	Result	Action
• Paper is at a stop before the Fusing Roller.	1	Is the paper curled, wavy or damp?	YES	Change the paper. Instruct the user on the storage of paper.
	2	Is the Pre-Fusing Guide Plate deformed or dirty?	YES	Correct, change or clean the Pre-Fusing Guide Plate.
	3	Refer to Steps 1, 2 and 3 on page T-17, and check the rotation of the Suction Belts and Suction Fan Motor M4.		
• Paper is at a stop in the Fusing Roller Section.	1	Are the Fusing Rollers scratched or dirty? Also, has the time to change the Fusing Rollers come?	YES	Clean or change the Fusing Rollers.
	2	Are the Paper Separator Fingers deformed, worn or dirty?	YES	Correct, change, or clean the Paper Separator Fingers.
	3	Is the Oil Roller dirty? Also, has the time to change the Oil Roller come?	YES	Clean or change the Oil Roller.
• Paper is at a stop in the Paper Exit Roll Section.	1	Check the Paper Exit Switch S53 as described below (see T-3): 1) Make sure that the port is APB5 on PWB-A (IC4A). 2) Select "I/O Port Data".		
		3) Is the data of APB5 on PWB-A (IC4A) "H"?	NO	Check the operation of the Actuator.
		4) Operate the Actuator with a sheet of paper to turn OFF S53.		
		5) Select "I/O Port Data" again. Has the data of APB5 on PWB-A (IC4A) changed from "H" to "L"?	NO	Change S53.
			YES	Change PWB-A.



3-5. PF-202 Paper Feed Cabinet Take-Up Misfeed



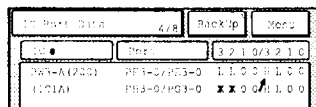
Symbol	Name
PC21	3rd Drawer Paper Take-Up Sensor
PC22	Vertical Transport Sensor 4
PC29	4th Drawer Paper Take-Up Sensor
M21	Vertical Transport Drive Motor
M22	3rd Drawer Paper Take-Up Motor
M23	4th Drawer Paper Take-Up Motor
PWB-A	EP3050/EP4050 Master Board
PWB-A	PF-202 Control Board



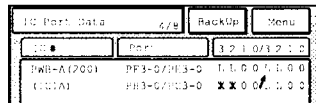
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◆ PF202 Take-Up Misfeed Clearing Procedure

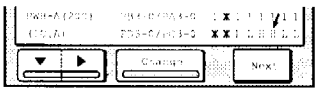
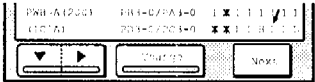
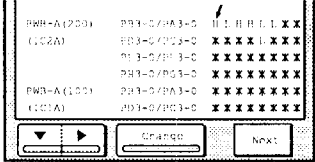
Symptom	Step	Check Item	Result	Action
<ul style="list-style-type: none"> Paper is not taken up at all. Paper is at a stop before the Paper Take-Up Sensor. 	1	Does the paper being used meet product specifications?	NO	Instruct the user to use the paper that meets product specifications.
	2	Is the paper curled, wavy or damp?	YES	Change the paper. Instruct the user on the storage of paper.
	3	Are the Paper Take-Up Motors M22, M23 rotating when the Start Key is turned ON?	YES	Check for overload.
			NO	Change PF-202 PWB-A or EP3050/EP4050 PWB-A. Check M22 and M23.
	4	Are the Paper Take-Up Roll and Paper Separator Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Take-Up Roll and Paper Separator Roll.
<ul style="list-style-type: none"> Paper is at a stop in the Vertical Transport Section. 	1	Is the Vertical Transport Drive Motor M21 rotating when the Start Key is turned ON?	NO	Change PF-202 PWB-A or EP3050/EP4050 PWB-A. Check M21.
			YES	Check for overload.
		Are the Vertical Transport Rollers and Guide Plate deformed, worn, or dirty with paper dust?	YES	Clean or change the Rollers and Guide Plate.
	2	When 3rd Drawer is used Check the 3rd Drawer Paper Take-Up Sensor PC21 as described below (see T-3): 1) Make sure that the port is PE3 on PWB-A (200) (IC1A). 2) Select "I/O Port Data". <hr/> 3) Is the data of PE3 on PWB-A (200) (IC1A) "H"?	NO	Check the operation of the Actuator.
		4) Operate the Actuator with a sheet of paper to block PC21. 5) Select "I/O Port Data" again. Has the data of PE3 on PWB-A (200) (IC1A) changed from "H" to "L"?	NO	Change PC21.

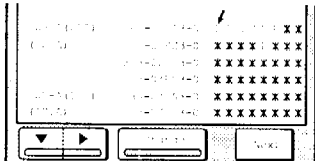


1134T146CB

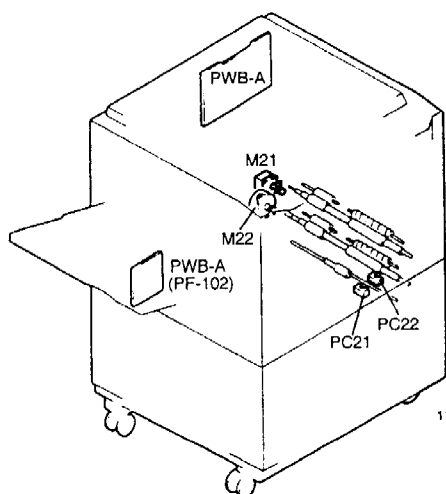


1134T147CA

Symptom	Step	Check Item	Result	Action
	3	<p>Check the Vertical Transport Sensor 4 PC22 as described below (see T-3):</p> <p>1) Make sure that the port is PC2 on PWB-A (200) (IC1A).</p> <p>2) Select "I/O Port Data".</p>	NO	Check the operation of the Actuator.
		<p>3) Is the data of PC2 on PWB-A (200) (IC1A) "H"?</p>  <p>1134T148CA</p>		
		<p>4) Operate the Actuator to block PC22.</p>	NO	Change PC22.
		<p>5) Select "I/O Port Data" again. Has the data of PC2 on PWB-A (200) (IC1A) changed from "H" to "L"?</p>  <p>1134T149CA</p>	YES	Change PF-202 PWB-A or EP3050/EP4050 PWB-A.
	4	<p>When 4th Drawer is used</p> <p>Check the 4th Drawer Paper Take-Up Sensor PC29 as described below (see T-3):</p> <p>1) Make sure that the port is PB3 on PWB-A (200) (IC2A).</p> <p>2) Select "I/O Port Data".</p>	NO	Check the operation of the Actuator.
		<p>3) Is the data of PB3 on PWB-A (200) (IC2A) "H"?</p>  <p>1134T150CA</p>		
		<p>4) Operate the Actuator with a sheet of paper to block PC29.</p>		

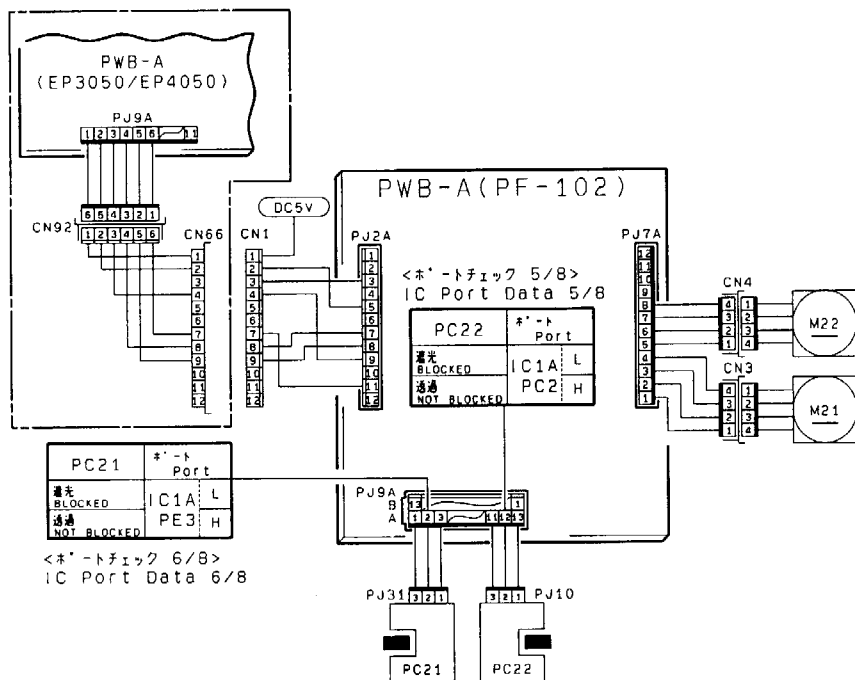
Symptom	Step	Check Item	Result	Action
		5) Select "I/O Port Data" again. Has the data of PB3 on PWB-A (200) (IC2A) changed from "H" to "L"?  1134T151CA	NO	Change PC29.
	5	Refer to Step 3 on page T-27 and check the Vertical Transport Sensor 4 PC22.		

3-6. PF-102 Paper Feed Cabinet Take-Up Misfeed



Symbol	Name
PC21	3rd Drawer Paper Take-Up Sensor
PC22	Vertical Transport Sensor 4
M21	Vertical Transport Drive Motor
M22	3rd Drawer Paper Take-Up Motor
PWB-A	EP3050/EP4050 Master Board
PWB-A	PF-102 Control Board

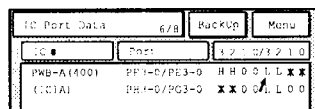
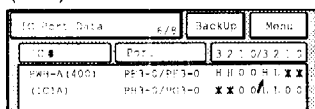
1136T003AA

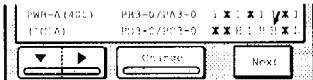
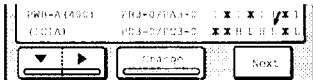


1134C24TAA

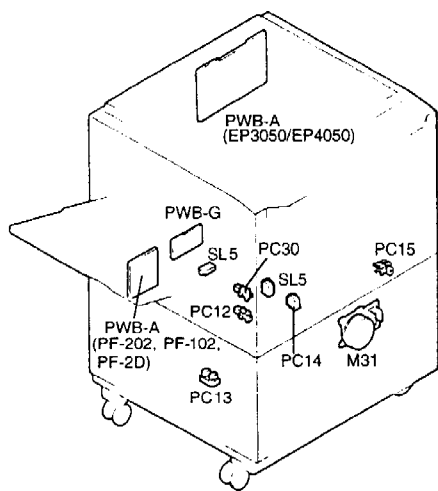
◆ PF-102 Take-Up Misfeed Clearing Procedure

Symptom	Step	Check Item	Result	Action
<ul style="list-style-type: none"> Paper is not taken up at all. Paper is at a stop before the 3rd Drawer Paper Take-Up Sensor PC21. 	1	Does the paper being used meet product specifications?	NO	Instruct the user to use the paper that meets product specifications.
	2	Is the paper curled, wavy or damp?	YES	Change the paper. Instruct the user on the storage of paper.
	3	Is the 3rd Drawer Paper Take-Up Motor M22 rotating when the Start Key is turned ON?	NO	Change PF-102 PWB-A or EP3050/EP4050 PWB-A. Check M22.
			YES	Check for overload.
	4	Are the Paper Take-Up Roll and Paper Separator Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Take-Up Roll and Paper Separator Roll.
<ul style="list-style-type: none"> Paper is at a stop in the Vertical Transport Section. 	1	Is the Vertical Transport Drive Motor M21 rotating when the Start Key is turned ON?	NO	Change PF-102 PWB-A or EP3050/EP4050 PWB-A. Check M21.
			YES	Check for overload.
		Are the Vertical Transport Rollers and Guide Plate deformed, worn, or dirty with paper dust?	YES	Clean or change the Rollers and Guide Plate.
	2	Check the 3rd Drawer Paper Take-Up Sensor PC21 as described below (see T-3): 1) Make sure that the port is PE3 on PWB-A (400) (IC1A). 2) Select "I/O Port Data".		
		3) Is the data of PE3 on PWB-A (400) (IC1A) "H"?	NO	Check the operation of the Actuator.
		4) Operate the Actuator with a sheet of paper to block PC21.		
		5) Select "I/O Port Data" again. Has the data of PE3 on PWB-A (400) (IC1A) changed from "H" to "L"?	NO	Change PC21.



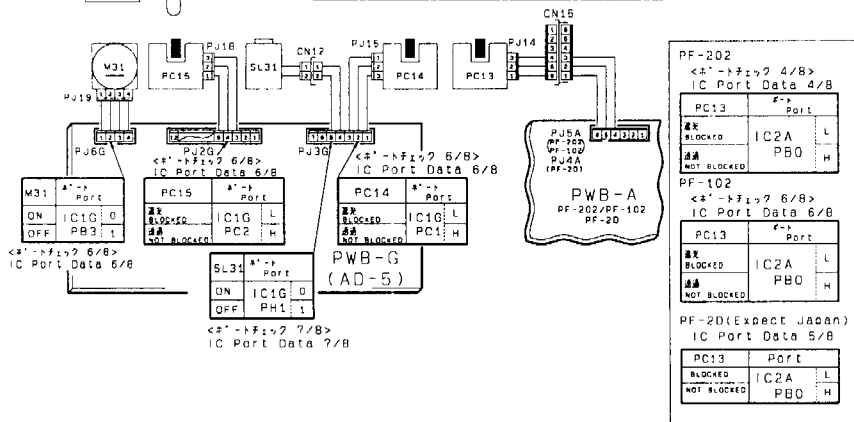
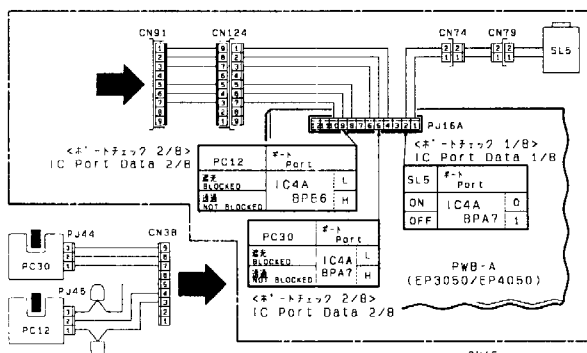
Symptom	Step	Check Item	Result	Action
		Check the Vertical Transport Sensor 4 PC22 as described below (see T- 3): 1) Make sure that the port is PC2 on PWB-A (400) (IC1A). 2) Select "I/O Port Data".		
	3	3) Is the data of PC2 on PWB-A (400) (IC1A) "H"?	NO	Check the operation of the Actuator.
		 1134T154CA		
		4) Operate the Actuator with a sheet of paper to block PC22.		
		5) Select "I/O Port Data" again. Has the data of PC2 on PWB-A (400) (IC1A) changed from "H" to "L"?	NO	Change PC22.
		 1134T155CA	YES	Change PF-102 PWB-A or EP3050/EP4050 PWB-A.

3-7. Duplex Unit Vertical Transport/Entry Misfeed



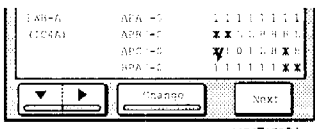
1136T001AA

Symbol	Name
PC12	Duplex Unit Vertical Transport Sensor 2
PC13	Duplex Unit Turnover Path Sensor
PC14	Duplex Unit Paper Entry Sensor
PC15	Duplex Unit Paper Empty Sensor
PC30	Duplex Unit Vertical Transport Sensor 1
SL31	Duplex Unit Gate Switching Solenoid
SL5	Exit/Duplex Solenoid
M31	Duplex Unit Drive Motor
PWB-A	EP3050/EP4050 Master Board
PWB-A	PF-202, PF-102, PF-2D Control Board
PWB-G	Control Board

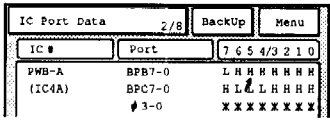
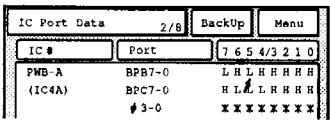
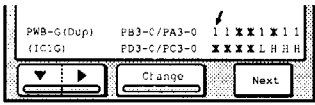


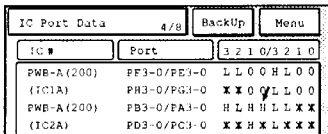
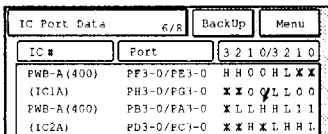
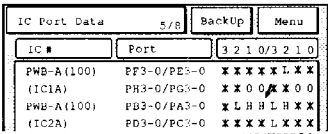
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◆ Duplex Unit Vertical Transport Misfeed Clearing Procedure

Symptom	Step	Check Item	Result	Action
		Is the paper curled, wavy or damp?	YES	Change the paper. Instruct the user on the storage of paper.
• Paper is at a stop in the Exit Section.	1	Check the operation of the Exit/Duplex Solenoid SL5 as described below (see T-4): 1) Make sure that the port is BPA7 on PWB-A (IC4A). 2) Select "I/O Port Data". 3) Is the data of BPA7 on PWB-A (IC4A) "1"?		
		 <p>1134T156CA</p>	NO	Change EP3050/EP4050 PWB-A.
		4) By pressing the "Change" key to change the data from "1" to "0", does SL5 operate? (Check that SL5 makes a sound.)	YES	To Step 3.
	2	By making a "Board Check" via "I/O Check" in the Tech. Rep. mode, is the malfunction code "C0321" displayed?	YES	Change EP3050/EP4050 PWB-A.
			NO	Change SL5.
	3	Are the Exit/Duplex Switching Plate and Upper and Lower Guide Plates deformed or dirty?	NO	Change or clean the Plates.


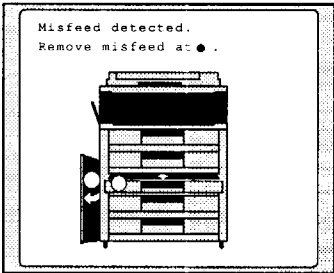
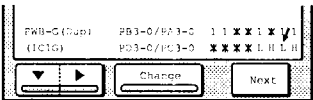
Symptom	Step	Check Item	Result	Action
<ul style="list-style-type: none"> Paper is at a stop in the Vertical Transport Section of the Duplex Unit. 	1	Run the Duplex Unit Drive Motor M31 (refer to page T-4) and check the operations of the Duplex Unit Vertical Transport Roll and Duplex Unit Drive Connection.		
		1) Open the middle left door. Make sure that the port is PB3 on 2) PWB-G (Dup) (IC1G). Select "I/O Port Data". By pressing the "Change" key to 3) change the data of PB3 on PWB-G 4) (Dup) (IC1G) from "1" to "0", drive M31. <div> </div>		
		5) Do the Duplex Unit Vertical Transport Roll and Duplex Unit Drive Connection operate properly?	NO	Check the gears, belts and rollers.
	2	Check the Duplex Unit Vertical Transport Sensor 1 PC30 as described below (see T-3):		
		1) Make sure that the port is BPB6 on PWB-A (IC4A). 2) Select "I/O Port Data". 3) Is the data of BPB6 on PWB-A (IC4A) "H"? <div> </div>	NO	Check the operation of the Actuator.
		4) Operate the Actuator to block PC30.		
		5) Select "I/O Port Data" again. Has the data of BPB6 on PWB-A (IC4A) changed from "H" to "L"? <div> </div>	NO	Change PC30.

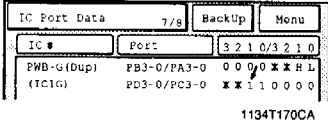
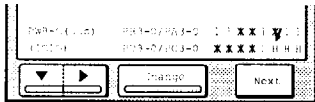
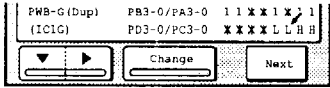
Symptom	Step	Check Item	Result	Action
	3	<p>Check the Duplex Unit Vertical Transport Sensor 2 PC12 as described below (see T-3):</p> <ol style="list-style-type: none"> 1) Make sure that the port is BPB5 on PWB-A (IC4A). 2) Select "I/O Port Data". 	NO	Check the operation of the Actuator.
		<p>3) Is the data of BPB5 on PWB-A (IC4A) "H"?</p>  <p>1134T160CA</p>		
		<p>4) Operate the Actuator to block PC12.</p>	NO	Change PC12.
		<p>5) Select "I/O Port Data" again. Has the data of BPB5 on PWB-A (IC4A) changed from "H" to "L"?</p>  <p>1134T161CA</p>	YES	Change EP3050/EP4050 PWB-A.
<p>• Paper is at a stop in the Turnover Section of the Duplex Unit.</p>	1	<p>Run the Duplex Unit Drive Motor M31 (refer to page T-4) and check the operations of the Paddle Roller, Slip Roller and Duplex Unit Drive Connection.</p> <ol style="list-style-type: none"> 1) Open the lower left door. 2) Make sure that the port is PB3 on PWB-G (Dup) (IC1G). 3) Select "I/O Port Data". 4) By pressing the "Change" key to change the data of PB3 on PWB-G (Dup) (IC1G) from "1" to "0", drive M31.  <p>1134T157CA</p>		
		<p>5) Do the Duplex Unit Vertical Transport Roll and Duplex Unit Drive Connection operate properly?</p>	NO	Check the gears, belts and rollers.

Symptom	Step	Check Item	Result	Action
	2	Are the Paddle, Roller, Slip Roller and Release Lever deformed, worn, or dirty with paper dust?	YES	Clean or change the Rollers. Check the Release Lever mechanism.
	3	Check the Duplex Unit Turnover Path Sensor PC13 as described below (see T-3):		
		1) Make sure that the port is PB0 on PWB-A (200) (IC2A) when PF-202 is used, PB0 on PWB-A (400) (IC2A) when PF-102 is used, or PB0 on PWB-A (100) (IC2A) when PF-2D is used.		
		2) Select "I/O Port Data".		
		3) Is the data of PB0 on PWB-A (200) (IC2A), PB0 on PWB-A (400) (IC2A), or PB0 on PWB-A (100) (IC2A) "H"?		Check the operation of the Actuator.
		<p><When PF-202 is used></p>  <p>1134T169CA</p> <p><When PF-102 is used></p>  <p>1134T164CB</p> <p><When PF-2D is used></p>  <p>1134T228CA</p>	NO	
		4) Operate the Actuator to block PC13.		

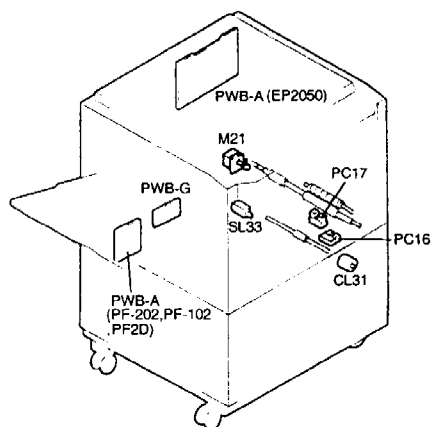
Symptom	Step	Check Item	Result	Action																																																																																																																																												
	5)	<p>Select "I/O Port Data" again. Has the data of PB0 on PWB-A (200) (IC2A), PB0 on PWB-A (400) (IC2A), or PB0 on PWB-A (100) (IC2A) changed from "H" to "L"?</p> <p><When PF-202 is used></p> <table border="1"> <tr> <td colspan="2">IC Port Data</td> <td>3/8</td> <td>BackUp</td> <td>Menu</td> </tr> <tr> <td>IC #</td> <td>Port</td> <td colspan="3">3 2 1 0/3 2 1 0</td> </tr> <tr> <td>PWB-A(200)</td> <td>PF3-0/PE3-0</td> <td>L</td><td>L</td><td>O</td><td>O</td><td>H</td><td>L</td><td>O</td><td>O</td> </tr> <tr> <td>(IC1A)</td> <td>PH3-0/PG3-0</td> <td>X</td><td>X</td><td>O</td><td>O</td><td>L</td><td>L</td><td>O</td><td>O</td> </tr> <tr> <td>PWB-A(200)</td> <td>PB3-0/PA3-0</td> <td>H</td><td>L</td><td>H</td><td>L</td><td>L</td><td>L</td><td>X</td><td>X</td> </tr> <tr> <td>(IC2A)</td> <td>PD3-0/PC3-0</td> <td>X</td><td>X</td><td>H</td><td>X</td><td>L</td><td>X</td><td>X</td><td>X</td> </tr> </table> <p>1134T165CA</p> <p><When PF-102 is used></p> <table border="1"> <tr> <td colspan="2">IC Port Data</td> <td>3/8</td> <td>BackUp</td> <td>Menu</td> </tr> <tr> <td>IC #</td> <td>Port</td> <td colspan="3">3 2 1 0/3 2 1 0</td> </tr> <tr> <td>PWB-A(400)</td> <td>PF3-0/PE3-0</td> <td>H</td><td>H</td><td>O</td><td>O</td><td>H</td><td>L</td><td>X</td><td>X</td> </tr> <tr> <td>(IC1A)</td> <td>PH3-0/PG3-0</td> <td>X</td><td>X</td><td>O</td><td>O</td><td>L</td><td>L</td><td>O</td><td>O</td> </tr> <tr> <td>PWB A(400)</td> <td>PB3-0/PA3-0</td> <td>X</td><td>L</td><td>L</td><td>L</td><td>H</td><td>L</td><td>L</td><td>L</td> </tr> <tr> <td>(IC2A)</td> <td>PD3-0/PC3-0</td> <td>X</td><td>X</td><td>H</td><td>X</td><td>L</td><td>H</td><td>H</td><td>L</td> </tr> </table> <p>1134T166CA</p> <p><When PF-2D is used></p> <table border="1"> <tr> <td colspan="2">IC Port Data</td> <td>3/8</td> <td>BackUp</td> <td>Menu</td> </tr> <tr> <td>IC #</td> <td>Port</td> <td colspan="3">3 2 1 0/3 2 1 0</td> </tr> <tr> <td>PWB-A(100)</td> <td>PF3-0/PE3-0</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td> </tr> <tr> <td>(IC1A)</td> <td>PH3-0/PG3-0</td> <td>X</td><td>X</td><td>O</td><td>O</td><td>X</td><td>X</td><td>O</td><td>O</td> </tr> <tr> <td>PWB-A(100)</td> <td>PB3-0/PA3-0</td> <td>X</td><td>L</td><td>H</td><td>L</td><td>L</td><td>H</td><td>X</td><td>X</td> </tr> </table> <p>1134T229CA</p>	IC Port Data		3/8	BackUp	Menu	IC #	Port	3 2 1 0/3 2 1 0			PWB-A(200)	PF3-0/PE3-0	L	L	O	O	H	L	O	O	(IC1A)	PH3-0/PG3-0	X	X	O	O	L	L	O	O	PWB-A(200)	PB3-0/PA3-0	H	L	H	L	L	L	X	X	(IC2A)	PD3-0/PC3-0	X	X	H	X	L	X	X	X	IC Port Data		3/8	BackUp	Menu	IC #	Port	3 2 1 0/3 2 1 0			PWB-A(400)	PF3-0/PE3-0	H	H	O	O	H	L	X	X	(IC1A)	PH3-0/PG3-0	X	X	O	O	L	L	O	O	PWB A(400)	PB3-0/PA3-0	X	L	L	L	H	L	L	L	(IC2A)	PD3-0/PC3-0	X	X	H	X	L	H	H	L	IC Port Data		3/8	BackUp	Menu	IC #	Port	3 2 1 0/3 2 1 0			PWB-A(100)	PF3-0/PE3-0	X	X	X	X	X	X	X	X	(IC1A)	PH3-0/PG3-0	X	X	O	O	X	X	O	O	PWB-A(100)	PB3-0/PA3-0	X	L	H	L	L	H	X	X	<p>NO</p> <p>YES</p>	<p>Change PC13.</p> <p>Change PF-202, PF-102 or PF-2D PWB-A or EP3050/EP4050 PWB-A.</p>
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(IC1A)	PH3-0/PG3-0	X	X	O	O	X	X	O	O																																																																																																																																							
PWB-A(100)	PB3-0/PA3-0	X	L	H	L	L	H	X	X																																																																																																																																							

◆ Duplex Unit Entry Misfeed Clearing Procedure

Symptom	Step	Check Item	Result	Action
• The leading edge of paper is at a stop inside the Duplex Unit.	1	Is the Paper Guide Mylar dirty or deformed?	YES	Clean or change the Mylar.
		Check the Duplex Unit Entry Sensor 1 PC14 as described below (see T-3):		
		1) Make sure that the port is PC1 on PWB-G (Dup) (IC1G). 2) Select "I/O Port Data".		
		3) Is the data of PC1 on PWB-G (Dup) (IC1G) "H"?	NO	Check the operation of the Actuator.
	2	 1134T167GA		
		4) Operate the Actuator with a sheet of paper to block PC14.		
		5) By mounting the Duplex Unit, is the Misfeed Screen displayed on the Touch Panel?	YES	To Step 3.
		 1134T168CA		
		6) Select "I/O Port Data" again. Has the data of PC1 on PWB-G (Dup) (IC1G) changed from "H" to "L"?	NO	Change PC14.
		 1134T169CA	YES	Change PWB-G, PF-202, PF-102 or PF-2D PWB-A, or EP3050/EP4050 PWB-A.

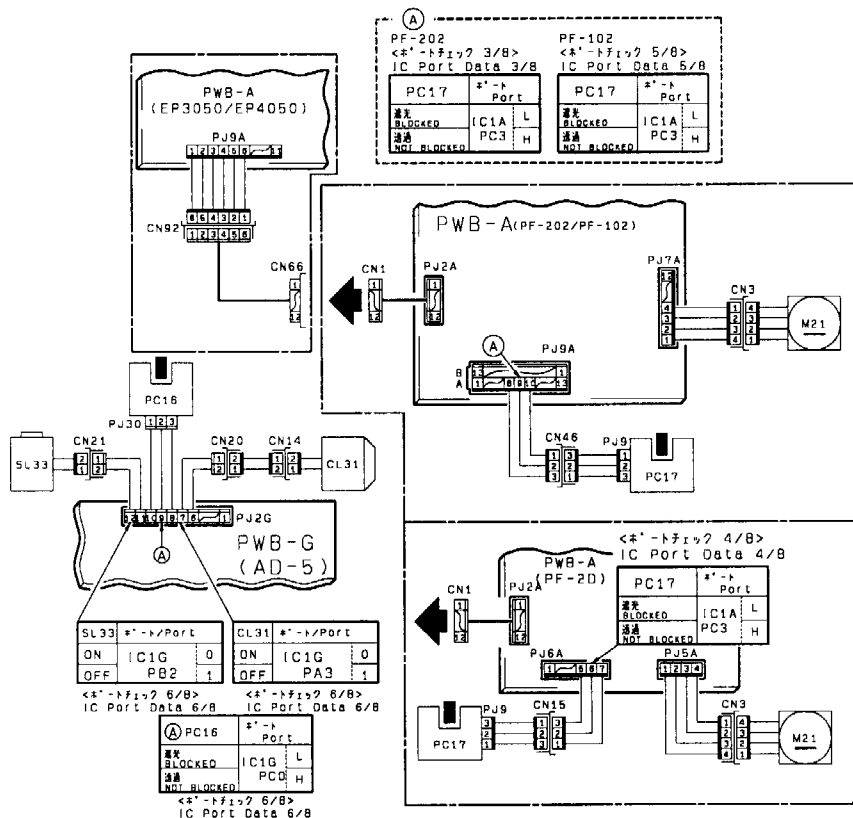
Symptom	Step	Check Item	Result	Action
	3	Check the operation of the Duplex Unit Gate Switching Solenoid SL31 (see T-4).		
		1) Make sure that the port is PH1 on PWB-G (Dup) (IC1G). Select "I/O Port Data".		
		2)		
		3) Is the data of PH1 on PWB-G (Dup) (IC1G) "1"?	NO	Change PWB-G, PF-202, PF-102 or PF-2D PWB-A, or EP3050/EP4050 PWB-A.
		 <p>IC Port Data 7/8 BackUp Menu</p> <p>IC # Port 3 2 1 0/3 2 1 0</p> <p>PWB-G (Dup) PB3-0/PA3-0 0 0 0 0 x x H L</p> <p>(IC1G) PD3-0/PC3-0 x x 1 1 0 0 0 0</p> <p>1134T170CA</p>		
		4) By pressing the "Change" key to change the data from "1" to "0", does SL31 operate? (Check that SL31 makes a sound.)	NO	Change SL31.
			YES	Check the operation of the Gate Switching Finger.
• Paper is at a stop in the Exit Section.	1	Check the Duplex Unit Paper Empty Sensor 1 PC15 as described below (see T-3):		
		1) Make sure that the port is PC2 on PWB-G (Dup) (IC1G). 2) Select "I/O Port Data".		
		3) Is the data of PC2 on PWB-G (Dup) (IC1G) "H"?	NO	Check the operation of the Actuator.
		 <p>PWB-G (Dup) PB3-0/PA3-0 1 1 x x 1 x 1</p> <p>(IC1G) PD3-0/PC3-0 x x x x L H H H</p> <p>Change Next</p> <p>1134T171CA</p>		
		4) Operate the Actuator with a sheet of paper to block PC15.		
		5) Select "I/O Port Data" again. Has the data of PC2 on PWB-G (Dup) (IC1G) changed from "H" to "L"?	NO	Change PC15.
		 <p>PWB-G (Dup) PB3-0/PA3-0 1 1 x x 1 x 1</p> <p>(IC1G) PD3-0/PC3-0 x x x x L L H H</p> <p>Change Next</p> <p>1134T172CA</p>		
			YES	Change PWB-G, PF-202, PF-102 or PF-2D PWB-A, or EP3050/EP4050 PWB-A.

3-8. Duplex Unit Take-Up Misfeed



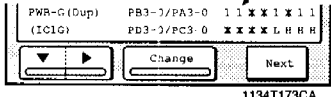
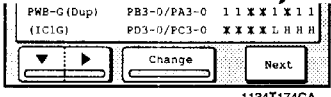
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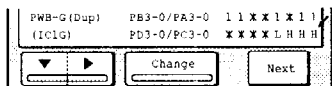

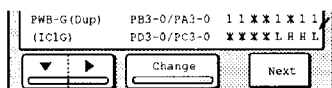
Symbol	Name
PC16	Duplex Unit Paper Take-Up Sensor
PC17	Vertical Transport Sensor 3
SL33	Duplex Unit Pick-Up Solenoid
CL31	Duplex Unit Paper Take-Up Clutch
M21	Vertical Transport Drive Motor
PWB-A	EP3050/EP4050 Master Board
PWB-A	PF-202, PF-102, PF-2D Control Board
PWB-G	Duplex Unit Control Board

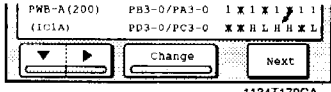
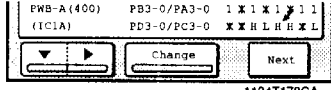
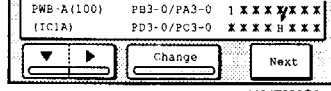


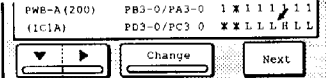
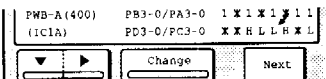
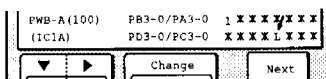
1134C26TAA

◆ Duplex Unit Take-Up Misfeed Clearing Procedure

Symptom	Step	Check Item	Result	Action
		Is the paper curled, wavy or damp?	YES	Change the paper. Instruct the user on the storage of paper.
• Paper is not taken up at all.	1	Check the operation of the Duplex Unit Pick-Up Solenoid SL33 as described below (see T-4):		
		1) Make sure that the port is PB2 on PWB-G (Dup) (IC1G).		
		2) Select "I/O Port Data".		
		3) Is the data of PB2 on PWB-G (Dup) (IC1G) "1"?	NO	Change PWB-G, PF-202, PF-102 or PF-2D PWB-A, or EP3050/EP4050 PWB-A.
			NO	Change SL33.
			YES	Check the Pick-Up mechanism.
	2	Check the operation of the Duplex Unit Paper Take-Up Clutch CL31 as described below (see T-4):		
		1) Make sure that the port is PA3 on PWB-G (Dup) (IC1G).		
		2) Select "I/O Port Data".		
		3) Is the data of PA3 on PWB-G (Dup) (IC1G) "1"?	NO	Change PWB-G, PF-202, PF-102 or PF-2D PWB-A, or EP3050/EP4050 PWB-A.
			NO	Change CL31.
			YES	Change PWB-G, PF-202, PF-102 or PF-2D PWB-A, or EP3050/EP4050 PWB-A.
	3	Are the Take-Up Roll, Feed Roll and Separator Roll dirty with paper dust, worn, or deformed?	YES	Clean or change the Rolls.

Symptom	Step	Check Item	Result	Action
● Paper is at a stop in the Vertical Transport Section.	1	Is the Vertical Transport Drive Motor M21 rotating when a copy is taken up and fed into the copier from the Duplex Unit?	NO	Change PF-202, PF-102 or PF-2D PWB-A, or EP3050/ EP4050 PWB-A. Check M21.
			YES	Check for overload.
	2	Are the Vertical Transport Rollers and Guide Plate deformed, worn, or dirty with paper dust?	YES	Clean or change the Vertical Transport Rollers and Guide Plate.
	3	Check the Duplex Unit Paper Take-Up Sensor PC16 as described below (see T-3): 1) Make sure that the port is PC1 on PWB-G (Dup) (IC1G). 2) Select "I/O Port Data". 3) Is the data of PC1 on PWB-G (Dup) (IC1G) "H"?	NO	Check the operation of the Actuator.
		 1134T175CA		
		4) Operate the Actuator with a sheet of paper to block PC16.	YES	To Step 4.
		5) By mounting the Duplex Unit, is the Misfeed Screen displayed on the Touch Panel?		
	 1134T176CB	NO	Change PC16.	
	6) Select "I/O Port Data" again. Has the data of PC1 on PWB-G (Dup) (IC1G) changed from "H" to "L"?	YES	Change PWB-G, PF-202, PF-102 or PF-2D PWB-A, or EP3050/EP4050 PWB-A.	
	 1134T177CA			

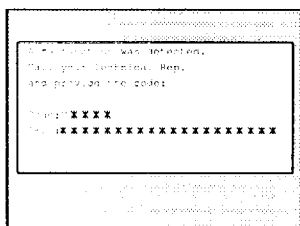
Symptom	Step	Check Item	Result	Action
		Check the Vertical Transport Sensor 3 PC17 as described below (see T-3):		
		1) Make sure that the port is PC3 on PWB-A (200) (IC1A) when PF-202 is used, PC3 on PWB-A (400) (IC1A) when PF-102 is used, or PC3 on PWB-A (100) (IC1A) when PF-2D is used. 2) Select "I/O Port Data".		
	4	3) Is the data of PC3 on PWB-A (200) (IC1A), PC3 on PWB-A (400) (IC1A), or PC3 on PWB-A (100) (IC1A) "H"? <When PF-202 is used>  1134T179CA <When PF-102 is used>  1134T178CA <When PF-2D is used>  1134T230CA 4) Operate the Actuator to block PC17.	NO	Check the operation of the Actuator.
		5) Select "I/O Port Data" again. Has the data of PC3 on PWB-A (200) (IC1A), PC3 on PWB-A (400) (IC1A), or PC3 on PWB-A (100) (IC1A) changed from "H" to "L"?	NO	Change PC17.
			YES	Change PF-202, PF-102 or PF-2D PWB-A or EP3050/EP4050 PWB-A.

Symptom	Step	Check Item	Result	Action
		<p><When PF-202 is used></p>  <p>1134T180CA</p> <p><When PF-102 is used></p>  <p>1134T181CA</p> <p><When PF-2D is used></p>  <p>1134T231CA</p>		

3 MALFUNCTIONS

The copier CPU has a function to self-diagnose the copier conditions.

On detection of a malfunction, the corresponding malfunction name, location and definition codes are shown on the Touch Panel of the copier together with a technical representative call message.



1134T226CB



<Malfunction Resetting Procedure>

- Press the Trouble Reset Switch on the Tech. Rep. Settings Switches Board PWB-I for Exposure Lamp failures (C04**) and Fusing failures (C05**).
- Swing open and close the Front Door for any other malfunctions.
- Note that for malfunctions of original size detection, the Front Door should be opened and closed after the Power Switch is turned OFF and ON.
- Disconnect and connect the option or open and close the option door for malfunctions of options.

<Isolation Malfunction Resetting Procedure>

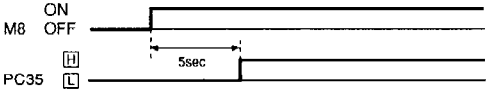
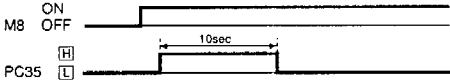
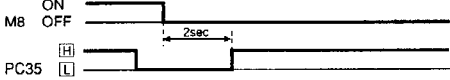
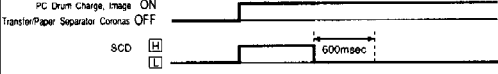
- Select "Machine Status" in the Tech. Rep. mode. With the malfunction code displayed, swing open and close the Front Door.
- For malfunctions of original size detection, turn the Power Switch OFF and ON, and select "Machine Status" in the Tech. Rep. mode. With the malfunction code displayed, swing open and close the Front Door.
- Pictorial symbols are used to indicate the isolation malfunctions of the Sorter. Reset these malfunctions by the following procedure:
 1. Select "Tech. Rep. Choice" in the Tech. Rep. mode, and set the Sorter function to "Disable Copy".
 2. Turn the Power Switch OFF and ON to call on the screen the malfunction code corresponding to the pictorial symbol.
 3. Do troubleshooting and turn the Power Switch OFF and ON.

1. Detection Timing

*: Applies to isolation malfunctions

	Code	Description	Detection Timing
Drive	C0000	Main Drive Motor M1's failure to turn	<p>The Main Drive Motor Lock signal remains HIGH for a continuous 1.5-second period 1 second after M1 has been energized.</p> <p>1134T39TCA</p>
	C0010	Main Drive Motor M1 turning at abnormal timing	<p>The Main Drive Motor Lock signal remains LOW for a continuous 1.5-second period 1 second after M1 has been deenergized.</p> <p>1134T40TCA</p>

	Code	Description	Detection Timing
Drive	C0040	Suction Fan Motor M4's failure to turn	<p>The Suction Fan Motor Lock signal remains HIGH for a continuous 1.5-second period 1 second after M4 has been energized.</p> <p>1136T47TCA</p>
	C004A	Original Glass Cooling Fan Motor M5's failure to turn	<p>The Original Glass Cooling Fan Motor Lock signal remains HIGH for a continuous 1.5-second period 1 second after M5 has been energized.</p> <p>1136T48TCA</p>
	C004b	Original Glass Cooling Fan Motor M5 turning at abnormal timing	<p>The Original Glass Cooling Fan Motor Lock signal remains LOW for a continuous 1.5-second period 10 seconds after M5 has been deenergized.</p> <p>1134T52TCA</p>
	C004c	Exhaust Fan Motor M3's failure to turn	<p>The Exhaust Fan Motor Lock signal remains HIGH for a continuous 1.5-second period 1 second after M3 has been energized.</p> <p>1134T41TCA</p>
	C004d	Exhaust Fan Motor M3 turning at abnormal timing	<p>The Exhaust Fan Motor Lock signal remains LOW for a continuous 1.5-second period 10 seconds after M3 has been deenergized.</p> <p>1134T42TCA</p>

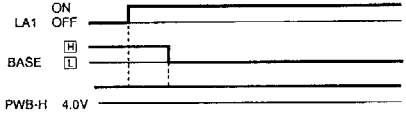
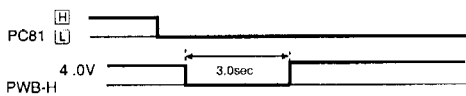
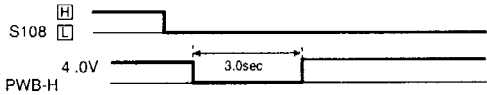
	Code	Description	Detection Timing
Drive	C0070	Main Hopper Toner Replenishing Motor M8's failure to turn	<p>The output from Toner Bottle Home Position Sensor PC35 does not go HIGH within 5 seconds after M8 has been energized.</p>  <p>1136T18TAA</p> <p>The output from PC35 does not go LOW within 10 seconds after it has gone HIGH following the energization of M8.</p>  <p>1136T19TAA</p>
	C0071	Main Hopper Toner Replenishing Motor M8 turning at abnormal timing	<p>The PC35 output is HIGH 2 seconds after M8 has been deenergized.</p>  <p>1136T20TAA</p>
	C0072	Sub Hopper Toner Replenishing Motor M9's failure to turn	When the current toner-to-carrier ratio is 2% lower than the SCH-90 setting and the Add Toner Indicator is not lit on the control panel, a toner replenishing sequence is carried out (M9 is turned); the toner-to-carrier ratio does not increase by 1% within 140 seconds or by 2% within 220 seconds.
	C0100	Charge Corona Wire winding failure	<ul style="list-style-type: none"> The following specified rotational pulses have not been counted during winding. Periodic winding: 16 pulses One-shot winding: 5 pulses It took 2 sec. or longer to detect one pulse.
PC Drum Charge, Image Transfer/Paper Separator Coronas	C0200	PC Drum Charge, Image Transfer/Paper Separator Coronas malfunction	<p>The Short Circuit Detection signal (SCD) remains LOW for a continuous 600-msec. period while the PC Drum Charge Corona or Image Transfer/Paper Separator Coronas remain ON.</p>  <p>1136T50TAA</p>

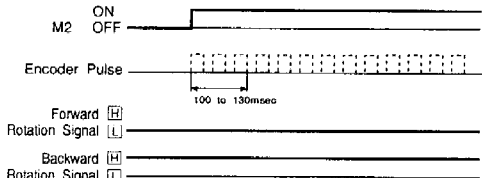
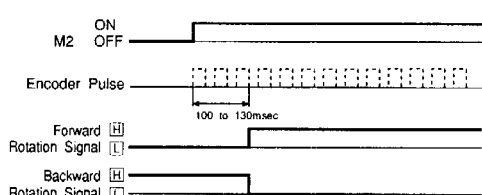
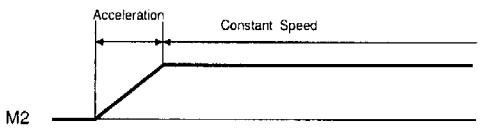
The copier performs a self-diagnostic sequence to determine if the microprocessor outputs a signal to each of the IC ports on Master Board PWB-A properly. It is intended to detect the following malfunctions (C03**). If the microprocessor fails to output any of these signals or if any of the electronic components on the board (driver IC, etc.) is faulty, the copier determines that there is a faulty condition existing and shows the corresponding malfunction code on the Touch Panel.

Note that C0370 (data for serial communication) is used to determine whether the output signal from the Master Board is transmitted to PWB-F and is sent back correctly. C0374 (data for serial communication) is used to determine whether the output signal from the Master Board is transmitted to PWB-A of the C-301 and is sent back correctly.

Code	Description (Input or output signal fault)	Port on Master Board	Detection Timing
C0300	The HIGH signal required to start the diagnostic sequence of each port is not input.	IC1A P85	<ul style="list-style-type: none"> When the "Board Check" of "I/O Check" in the Tech. Rep. Mode is executed.
C0311	AVR PWM	IC1A P50	
C0312	H1 REM	IC1A P51	<ul style="list-style-type: none"> When the "Board Check" of "I/O Check" in the Tech. Rep. Mode is executed. When a malfunction occurs.
C0313	Grid PWM	IC1A P56	<ul style="list-style-type: none"> When the "Board Check" of "I/O Check" in the Tech. Rep. Mode is executed.
C0314	PWB-H PWM	IC1AP60	
C0315	SL4 UP	IC5A APC1	
C0316	SL4 DOWN	IC5A APC0	
C0317	LA2 DATA	IC1A P64	
C0318	LA2 MODE	IC1A P65	
C0319	LA2 CLK	IC1A P66	
C031A	LA2 STROBE	IC1A P67	
C031B	M8 REM	IC4A APA3	<ul style="list-style-type: none"> When the "Board Check" of "I/O Check" in the Tech. Rep. Mode is executed. When a malfunction occurs.
C031C	M9 REM	IC4A APA2	
C031D	AVR REM	IC4A APA1	<ul style="list-style-type: none"> When the "Board Check" of "I/O Check" in the Tech. Rep. Mode is executed. When a malfunction occurs.
C031E	SCAN	IC4A APA0	
C031F	SL1 REM	IC4A APC6	<ul style="list-style-type: none"> When the "Board Check" of "I/O Check" in the Tech. Rep. Mode is executed.
C0320	M4 Switching	IC4A APC5	<ul style="list-style-type: none"> When the "Board Check" of "I/O Check" in the Tech. Rep. Mode is executed. When a malfunction occurs.

Code	Description (Input or output signal fault)	Port on Master Board	Detection Timing
C0321	SL5	IC4A BPA7	<ul style="list-style-type: none"> When the "Board Check" of "I/O Check" in the Tech. Rep. Mode is executed.
C0322	Separator/Bias REM	IC4A BPA6	
C0323	PC Drum Charge/Image Transfer REM	IC4A BPA5	
C0324	CL1	IC4A BPA4	
C0325	CL2	IC4A BPA3	
C0326	CL3	IC4A BPA2	
C0329	M1 REM	IC5A BPC7	<ul style="list-style-type: none"> When the "Board Check" of "I/O Check" in the Tech. Rep. Mode is executed. When a malfunction occurs.
C032A	Vendor (in copy cycle)	IC5A BPA7	<ul style="list-style-type: none"> When the "Board Check" of "I/O Check" in the Tech. Rep. Mode is executed.
C032B	Vendor (size)	IC5A BPA6	
C032C	UN2 Area 1	IC5A BPA5	
C032D	UN2 Area 2	IC5A BPA4	
C032E	ENABLE	IC5A BPA2	
C032F	Seal Bias REM	IC5A BPA1	
C0331	RY3 REM	IC5A BPC5	
C0332	M5 REM	IC5A BPC4	<ul style="list-style-type: none"> When the "Board Check" of "I/O Check" in the Tech. Rep. Mode is executed. When a malfunction occurs.
C0333	LA 3	IC5A APC3	
C0334	M3 REM	IC4A APC3	
C0335	M10 REM	IC4A APC7	
*C0350	Output Data for Serial Communication (PWB-F)	IC3A S10/S00	<ul style="list-style-type: none"> When the "Board Check" of "I/O Check" in the Tech. Rep. Mode is executed. When a malfunction occurs.
*C0351	Output Data for Serial Communication (PF-202, PF-102)	IC3A S11/S01	
*C0352	Output Data for Serial Communication (PF-202, PF-102)	IC3A S12/S02	
*C0353	Output Data for Serial Communication (AD-5, storage drawer)	IC3A S13/S03	
*C0354	Output Data for Serial Communication (C-301)	IC3A S14/S04	
*C0370	Input Data for Serial Communication (PWB-F)	IC3A S10/S00	
*C0374	Input Data for Serial Communication (C-301)	IC3A S14/S04	

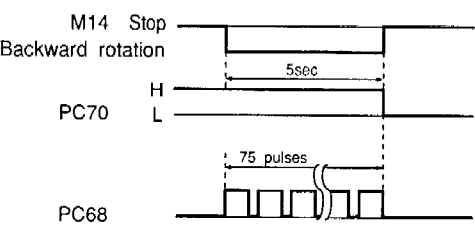
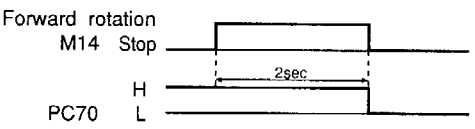
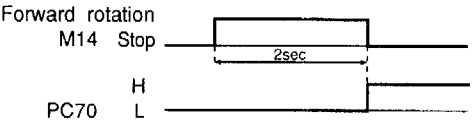
	Code	Description	Detection Timing
Exposure Lamp	C0400	Exposure Lamp LA1's failure to turn ON	<p>The output from AE Sensor Board PWB-H has not become 4.0 V or less for the period between when LA1 turns ON and the Scanner starts a scan motion and when the Image Leading Edge signal (BASE) turns ON (goes LOW).</p>  <p>1136T22TAA</p>
	C0410	Exposure Lamp LA1 turning ON at abnormal timing	<p>The output from PWB-H remains 4.0 V or less for a continuous 3-second period at any timing while the output from Scanner Reference Position Sensor PC81 remains LOW.</p>  <p>1136T23TAA</p> <p>The output from PWB-H remains 4.0 V or less for a continuous 3-second period while the output from Size Reset Switch S108 remains LOW (i.e., while the Original Cover remains closed).</p>  <p>1136T24TAA</p>
	C0500	Warming-up failure	<ul style="list-style-type: none"> When Power Switch S1 or Front Door Interlock Switch S21 is ON, the surface temperature of the Upper Fusing Roller: (Less than 165°C) <ul style="list-style-type: none"> * Does not reach 100°C within 180 seconds. * Does not reach 150°C within 60 seconds after it has reached 100°C. * Does not reach 175°C within 60 seconds after it has reached 150°C. * Does not reach 200°C within 240 seconds after it has reached 150°C. (165°C or more) <ul style="list-style-type: none"> * Does not reach 200°C within 60 seconds. After the copier has left the Energy Saver mode: <ul style="list-style-type: none"> * Does not reach 200°C within 120 seconds.
Fusing Unit	C0510	Abnormally low fusing temperature	<p>The surface temperature of the Upper Fusing Roller remains 130°C or less for a continuous 5-second period after the copier has warmed up.</p>

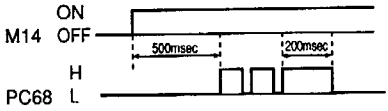
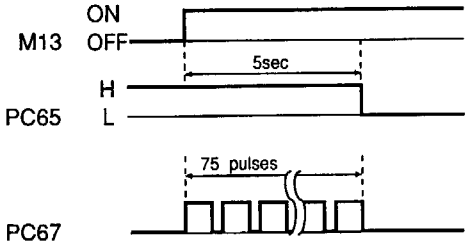
	Code	Description	Detection Timing
Optical Section (Scanner)	C0520	Abnormally high fusing temperature	The surface temperature of the Upper Fusing Roller remains 230°C or more for a continuous 5-second period after the copier has warmed up.
	C0522	Fusing Front/Rear Thermistor TH1/2 malfunction	The voltages from TH1 and TH2 remain 0.165 V or less for a continuous 1-second period after the copier has warmed up.
	C0600	Scanner Motor M2 malfunction	<p>Where no encoder pulses are input to SCP Board PWB-J for 100 to 130 msec. while M2 is turning, the Forward/Backward Rotation signal from PWB-J does not go from LOW to HIGH, or vice versa, when an attempt is made to turn M2 backward.</p>  <p style="text-align: right;">1136T51TCA</p>
	C0601	SCP Board PWB-J malfunction	<p>Where no encoder pulses are input to SCP Board PWB-J for 100 to 130 msec. while M2 is turning, the Forward/Backward Rotation signal from PWB-J goes from LOW to HIGH, or vice versa, when an attempt is made to turn M2 backward.</p>  <p style="text-align: right;">1136T52TCA</p>
	C0650	Scanner Reference Position Sensor PC81 malfunction	<p><At the start of the Scanner's scan motion> PC81 is not unblocked [H] even after the lapse of a given period of time.</p> <p><At the end of the Scanner's return motion> PC81 is not blocked [L] even after the lapse of a given period of time.</p>
	C0660	Scanner load failure	<p>The M2 speed control does not change from the Acceleration to Constant Speed control for the period between when the SHOME signal goes LOW and when a LOW TRON signal is detected.</p>  <p style="text-align: right;">1136T53TCA</p>

Optical Section (Scanner)	Code	Description	Detection Timing
	C06F0	SHOME signal failure	<p><During prescan></p> <ul style="list-style-type: none"> When the Scanner is at a position other than home, the SHOME signal does not go LOW even after the lapse of 5 seconds after S1 has been turned ON. The SHOME signal does not go LOW even after the lapse of 5 seconds after the SCEND signal has gone from LOW to HIGH. <p><During a copy cycle></p> <ul style="list-style-type: none"> When the Scanner is at a position other than home, the SHOME signal does not go LOW even after the lapse of 7 seconds after the SCAN signal has gone LOW. The SHOME signal does not go LOW even after the lapse of 5 seconds after the SCEND signal has gone from LOW to HIGH.
	C06F1	SHOME signal failure	The SHOME signal does not go HIGH even after the lapse of 7 seconds after it has gone LOW.
	C06F2	BASE signal failure	The BASE signal does not go LOW even after the lapse of 5 seconds after the SHOME signal has gone HIGH.
	C06F3	BASE signal failure	<p><During prescan></p> <p>The BASE signal does not go HIGH even after the lapse of 5 seconds after the TRON signal has gone LOW.</p>
	C06F4	TRON signal failure	<p><During prescan></p> <p>The TRON signal does not go LOW even after the lapse of 5 seconds after the BASE signal has gone LOW.</p> <p><During a copy cycle></p> <p>The TRON signal does not go LOW even after the lapse of 5 seconds after the SHOME signal has gone HIGH.</p>
	C06F5	TRON signal failure	<p><During prescan></p> <p>The TRON signal does not go HIGH even after the lapse of 5 seconds after the BASE signal has gone HIGH.</p>
	C06F6	SCEND signal failure	<p><During prescan></p> <p>The SCEND signal does not go LOW even after the lapse of 5 seconds after the TRON signal has gone HIGH.</p> <p><During a copy cycle></p> <p>The SCEND signal does not go LOW even after the lapse of 5 seconds after the SHOME signal has gone HIGH.</p>
	C06F7	SCEND signal failure	The SCEND signal does not go HIGH even after the lapse of 5 seconds after it has gone LOW.

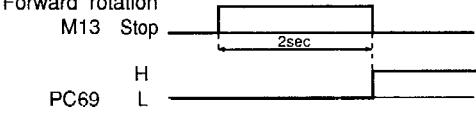
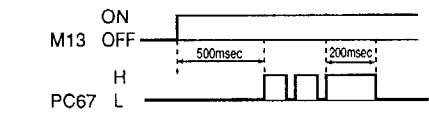
	Code	Description	Detection Timing
Optical Section (Lens)	C0610	Lens motion failure	The output from Lens Reference Position Sensor PC90 does not go from HIGH to LOW, or vice versa, even after the lapse of a given period of time after Lens Motor M6 has been energized.
Optical Section (Mirror)	C0620	4th/5th Mirrors motion failure	The output from Mirror Reference Position Sensor PC86 does not go from HIGH to LOW, or vice versa, even after the lapse of a given period of time after Mirror Motor M7 has been energized.

	Code	Description	Detection Timing
Paper Take-Up Section	C0910 *	2nd Drawer Paper Lift-Up failure	<ul style="list-style-type: none"> The 2nd Drawer Paper Lift-Up Sensor PC66 is not blocked (L) 5 sec. after the 2nd Drawer Paper Lift-Up Motor M14 has started rotating forward. The 2nd Drawer Paper Lift-Up Motor Pulse Sensor PC68 detected 75 pulses edges after M14 had started rotating forward. <p>Forward rotation</p> <p>M14 Stop</p> <p>5sec</p> <p>PC66 H L</p> <p>PC68</p> <p>75 pulses</p> <p>1134T43TCB</p>
	C0911 (Inch Area) *	2nd Drawer Paper Lower-Down failure	<p>The 2nd Drawer Paper Lift-Up Sensor PC66 is not unblocked (H) though the 2nd Drawer paper Lift-Up Motor Pulse Sensor PC68 detected 10 pulses edges after M14 had started rotating backward.</p> <p>M14 Stop</p> <p>Backward rotation</p> <p>10 pulses</p> <p>PC68</p> <p>PC66 H L</p> <p>1134T44TCB</p>

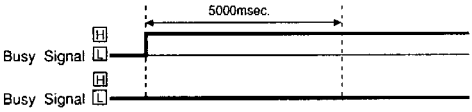
	Code	Description	Detection Timing
Paper Take-Up Section	C0912 (Inch Area) *	2nd Drawer Paper Lower-Down failure 2nd Drawer Lock failure	<p><Lower-down failure></p> <ul style="list-style-type: none"> The 2nd Drawer Lowered Position Sensor PC70 is not blocked (L) 5 sec. after the 2nd Drawer Paper Lift-Up Motor M14 has started rotating backward. PC70 is not blocked (L) though the 2nd Drawer Paper Lift-Up Motor Pulse Sensor PC68 detected 75 pulses after M14 had started rotating backward.  <p style="text-align: right;">1134T45TCB</p> <p><Lock failure></p> <ul style="list-style-type: none"> The 2nd Drawer Lowered Position Sensor PC70 is not blocked (L) 2 sec. after the 2nd Drawer Paper Lift-Up Motor M14 has started rotating forward.  <p style="text-align: right;">1134T46TCA</p>
	C0913 (Inch Area) *	2nd Drawer Lock failure	<p>With the 2nd Drawer Lowered Position Sensor PC70 blocked (L), PC70 is not unblocked (H) 2 sec. after the 2nd Drawer Paper Lift-Up Motor M14 has started rotating forward.</p>  <p style="text-align: right;">1134T47TCA</p>

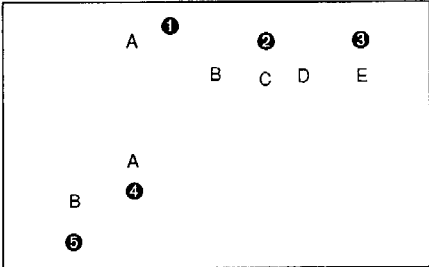
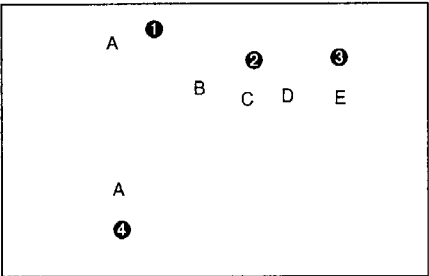
	Code	Description	Detection Timing
Paper Take-Up Section	C0914 *	2nd Drawer Paper Lift-Up Motor M14's failure to turn	<ul style="list-style-type: none"> The 2nd Drawer Paper Lift-Up Motor Pulse Sensor PC68 detects no pulses 500 msec. after M14 had been energized. The 2nd Drawer Paper Lift-Up Motor Pulse Sensor PC68 detects no pulses for 200 msec. while M14 was being energized.  <p style="text-align: right;">1134T31TAA</p>
	C0916 (Inch Area) *	2nd Drawer lock release failure	The 2nd Drawer is not pushed out 2 sec. after the 2nd Drawer Lowered Position Sensor C70 has been blocked (L) during lowering motion.
	C0920 *	1st Drawer Paper Lift-Up failure	<ul style="list-style-type: none"> The 1st Drawer Paper Lift-Up Sensor PC65 is not blocked (L) 5 sec. after the 1st Drawer Paper Lift-Up Motor M13 has been energized. The 1st Drawer Paper Lift-Up Motor Pulse Sensor PC67 detects 75 pulses after M13 has been energized.  <p style="text-align: right;">1134T48TCB</p>

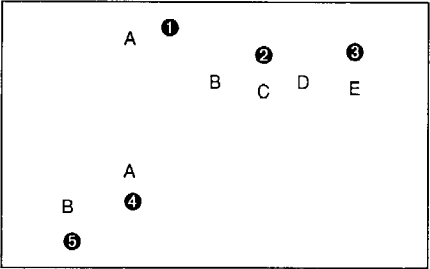
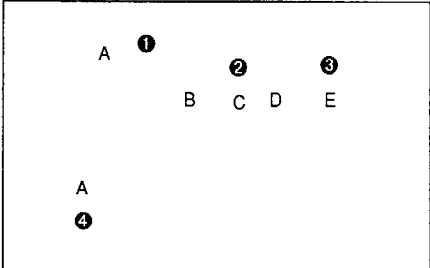
	Code	Description	Detection Timing
Paper Take-Up Section	C0921 (Inch Area) *	1st Drawer Paper Lower-Down failure	<p>The 1st Drawer Paper Lift-Up Sensor PC65 is not unblocked (H) though the 1st Drawer Paper Lift-Up Motor Pulse Sensor PC67 detected 10 pulses after M13 had started rotating backward.</p> <p>M14 Stop Backward rotation</p> <p>PC67</p> <p>PC65 H L</p> <p>1134T49TCB</p>
	C0922 (Inch Area) *	1st Drawer Paper Lower-Down failure 1st Drawer Lock failure	<p><Lower-down failure></p> <ul style="list-style-type: none"> The 1st Drawer Lowered Position Sensor PC69 is not blocked (L) 5 sec. after the 1st Drawer Paper Lift-Up Motor M13 has started rotating backward. PC69 is not blocked (L) though the 1st Drawer Paper Lift-Up Motor Pulse Sensor PC67 detected 75 pulses after M13 had started rotating backward. <p>M13 Stop Backward rotation</p> <p>PC69 H L</p> <p>PC67</p> <p>1134T50TCB</p> <p><Lock failure></p> <ul style="list-style-type: none"> The 1st Drawer Lowered Position Sensor PC69 is not blocked (L) 2 sec. after the 1st Drawer Paper Lift-Up Motor M13 has started rotating forward. <p>Forward rotation</p> <p>M13 Stop</p> <p>PC69 H L</p> <p>1134T51TCA</p>

	Code	Description	Detection Timing
Paper Take-Up Section	C0923 (Inch Area) *	1st Drawer lock failure	<p>With the 1st Drawer Lowered Position Sensor PC69 blocked (L), PC69 is not unblocked (H) 2 sec. after the 1st Drawer Paper Lift-Up Motor M13 has started rotating forward.</p> <p>Forward rotation M13 Stop</p>  <p>PC69 H L</p> <p>1134T52TCA</p>
	C0924 *	1st Drawer Paper Lift-Up Motor M13's failure to turn	<ul style="list-style-type: none"> The 1st Drawer Paper Lift-Up Motor Pulse Sensor PC67 detects no pulses 500 msec. after M13 has been energized. The 1st Drawer Paper Lift-Up Motor Pulse Sensor PC67 detects no pulses for 200 msec. while M13 is being energized. <p>ON M13 OFF</p>  <p>PC67 H L</p> <p>1134T53TCA</p>
	C0926 (Inch Area) *	1st Drawer lock release failure	<p>The 1st Drawer is not pushed out 2 sec. after the 1st Drawer Lowered Position Sensor PC69 has been blocked (L) during lowering motion.</p>

	Code	Description	Detection Timing
Erase Lamps	C0E00	Main Erase Lamp LA3's failure to turn ON	<p>The LA3 Malfunction signal remains HIGH for a continuous 1-second period while LA3 remains ON.</p> <p>LA3 ON LA3 OFF</p> <p>LA3 Malfunction Signal [H] [L]</p> <p>1.0sec</p> <p>1136T54TCA</p>
	C0E01	Main Erase Lamp LA3 turning ON at abnormal timing	<p>The LA3 Malfunction signal remains LOW for a continuous 1-second period while LA3 remains OFF.</p> <p>LA3 ON LA3 OFF</p> <p>LA3 Malfunction Signal [H] [L]</p> <p>1.0sec</p> <p>1136T55TCA</p>
	C0E20	Image Erase Lamp LA2's failure to turn ON	<p>The LA2 gate array is defective according to the self-diagnoses made immediately after Main Drive Motor M1 has been deenergized.</p>
Sensors	C0F02 *	Original Size Detecting Board UN2 malfunction	<p>In F7 test operation:</p> <ol style="list-style-type: none"> 1) The Busy signal does not go LOW within approx. 800 msec. after the Initial signal has gone LOW, or undefined data is input to the master CPU. 2) If step 1 above is checked okay, the Busy signal goes HIGH within approx. 200 msec. 3) If both steps 1 and 2 above are checked okay, the Busy signal does not go HIGH within approx. 4,000 msec. 4) If steps 1, 2, and 3 above are checked okay, undefined data is input to master CPU within approx. 500 msec. <p>Initial Signal [H] [L]</p> <p>Busy Signal</p> <p>1) 800msec 2) 200msec 3) 400msec 4) 500msec</p> <p>1136T56TCA</p> <p>Under normal conditions:</p> <ol style="list-style-type: none"> 1) The Busy signal remains HIGH or LOW for approx. 3,000 msec. or more. 2) Undefined data is input to master CPU. <p>Busy Signal</p> <p>70msec 70msec 70msec 3000msec</p> <p>1136T57TCA</p>

	Code	Description	Detection Timing
Sensors	C0F02 *	Original Size Detecting Board UN2 malfunction	<p>When S1 is turned ON:</p> <ol style="list-style-type: none"> 1) The Busy signal remains HIGH or LOW for approx. 5,000 msec. or more. 2) Undefined data is input to master CPU.  <p style="text-align: right;">1136T60TCA</p>

	Code	Description	Detection Timing and Sensor Layout
Original Size Detecting Board *	C0FE1	Original Size Detecting Sensor ① failure	<p><Detection Timing> After having read the output data from PC115 to PC119, UN2 determines that there is a failure.</p> <p><Sensor Layout> (Metric Areas) <ul style="list-style-type: none"> ①: PC116, ②: PC117, ③: PC118 (option), ④: PC115, ⑤: PC119 (option) * PC118 and PC119 are standard for Hong Kong area. • A to E: Sensor locations </p>  <p>(Inch Areas) <ul style="list-style-type: none"> ①: PC116 (option), ②: PC117, ③: PC118 (option), ④: PC115 </p> 
	C0FE2	Original Size Detecting Sensor ② failure	
	C0FE3	Original Size Detecting Sensors ① and ② failure	
	C0FE4	Original Size Detecting Sensor ③ failure	
	C0FE5	Original Size Detecting Sensors ① and ③ failure	
	C0FE6	Original Size Detecting Sensors ② and ③ failure	
	C0FE7	Original Size Detecting Sensors ①, ②, and ③ failure	
	C0FE8	Original Size Detecting Sensor ④ failure	
	C0FE9	Original Size Detecting Sensors ① and ④ failure	
	C0FEA	Original Size Detecting Sensors ② and ④ failure	
	C0FEB	Original Size Detecting Sensors ①, ②, and ④ failure	
	C0FEC	Original Size Detecting Sensors ③ and ④ failure	
	C0FED	Original Size Detecting Sensors ①, ③, and ④ failure	
	C0FEE	Original Size Detecting Sensors ②, ③, and ④ failure	
	C0FEF	Original Size Detecting Sensors ①, ②, ③, and ④ failure	

	Code	Description	Sensor Layout
Original Size Detecting Board *	C0FF0	Original Size Detecting Sensor ⑤ failure	<p>(Metric Areas)</p> <ul style="list-style-type: none"> ①: PC116, ②: PC117, ③: PC118 (option), ④: PC115, ⑤: PC119 (option) * PC118 and PC119 are standard for Hong Kong area. A to E: Sensor locations  <p>(Inch Areas)</p> <ul style="list-style-type: none"> ①: PC116 (option), ②: PC117, ③: PC118 (option), ④: PC115 
	C0FF1	Original Size Detecting Sensors ① and ⑤ failure	
	C0FF2	Original Size Detecting Sensors ② and ⑤ failure	
	C0FF3	Original Size Detecting Sensors ①, ②, and ⑤ failure	
	C0FF4	Original Size Detecting Sensors ③ and ⑤ failure	
	C0FF5	Original Size Detecting Sensors ①, ③, and ⑤ failure	
	C0FF6	Original Size Detecting Sensors ②, ③, and ⑤ failure	
	C0FF7	Original Size Detecting Sensors ①, ②, ③, and ⑤ failure	
	C0FF8	Original Size Detecting Sensors ④ and ⑤ failure	
	C0FF9	Original Size Detecting Sensors ①, ④, and ⑤ failure	
	C0FFA	Original Size Detecting Sensors ②, ④, and ⑤ failure	
	C0FFB	Original Size Detecting Sensors ①, ②, ④, and ⑤ failure	
	C0FFC	Original Size Detecting Sensors ③, ④, and ⑤ failure	
	C0FFD	Original Size Detecting Sensors ①, ③, ④, and ⑤ failure	
	C0FFE	Original Size Detecting Sensors ②, ③, ④, and ⑤ failure	
	C0FFF	Original Size Detecting Sensors ①, ②, ③, ④, and ⑤ failure (Metric Areas)	

	Code	Description	Detection Timing
Sensors	C0F10	AE Sensor Board PWB-H malfunction	<p><In normal conditions></p> <ul style="list-style-type: none"> The output from PWB-H remains approx. 0.18 V or less for a continuous 2-second period when LA1 is OFF, PC81 output is LOW, or S108 output is LOW (i.e., the Original Cover is closed). <p><In F5 or FF test operation></p> <ul style="list-style-type: none"> The output from PWB-H is less than 1.8 V when 100% of PWB-H is illuminated. The output from PWB-H is 1.8 V or more when PWB-H is not illuminated. The output from PWB-H is outside the target range (1.8 ± 0.05 V) when 50% of PWB-H is illuminated. <p><When the optimum LA1 voltage is changed after the intensity of LA1 light has been corrected></p> <ul style="list-style-type: none"> The output from PWB-H when 100% of PWB-H is illuminated is smaller than that for halftones stored in the F5 test operation. The output from PWB-H when PWB-H is not illuminated is smaller than that for halftones stored in the F5 test operation. The output from PWB-H when 50% of PWB-H is illuminated is outside the range (± 0.05 V) of output for halftones stored in the F5 test operation.
	C0F20 *	AIDC Sensor UN3 variation correction failure	<p><At 1st F5 or FF test operation></p> <ul style="list-style-type: none"> The UN3 output is 0.95 V or more when all signals from the 4-bit analog switch are made LOW (i.e., with a maximum load resistance). The UN3 output is less than 1.05 V when all signals from the 4-bit analog switch are made HIGH (i.e., with a minimum load resistance).
	C0F21 *	AIDC Sensor UN3 contamination correction failure	<p><In F5 or FF test operation></p> <ul style="list-style-type: none"> The AIDC Sensor output does not fall in the range between 1 V and less than 1.2 V when the intensity of the sensor LED is varied.
	C0F22 *	AIDC Sensor UN3 VG correction failure	<p><At the 1st F5 or FF test operation></p> <ol style="list-style-type: none"> The grid voltage (VG) of 550 V (reference) is output. A solid black pattern is produced. If the AIDC Sensor output is less than 4.2 V at this time: The grid voltage does not become 4.2 V or more even when it is increased 3 steps (90 V)
	C0F23 *	AIDC Sensor UN3 exposure correction failure	<p><At the 1st F5 or FF test operation></p> <ol style="list-style-type: none"> LA1 is turned ON with 58 V (reference). A halftone pattern is produced. The LA1 output is varied so that the AIDC Sensor output falls within the target range. The AIDC Sensor output does not fall within the target range even after steps 1 to 3 have been repeated eight times, the output value being outside the error level.

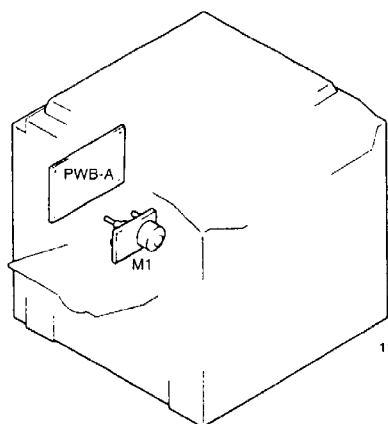
	Code	Description	Detection Timing
Sensors	C0F30 *	ATDC Sensor UN4 failure	<ul style="list-style-type: none"> The UN4 output remains approx. 0.18 V or less or 4.52 V or more for a continuous 3-second period while M1 remains energized.
	C0F31	ATDC Sensor UN4 failure	<ul style="list-style-type: none"> When the value shown for "Set" of "ATDC Level" of "Level History" is greatly different from the value set in the FF test operation. In the FF mode, the output of the ATDC Sensor (UN4) did not fall within the range 4.45V to 11.05V.
PF-202 *	C0900	3rd Drawer Lift-Up Sensor malfunction	See PF-202 Service Manual (Metric Area).
	C0904	3rd Drawer Lift-Up Motor's failure to turn	
	C0950	4th Drawer Lift-Up Sensor malfunction	
	C0954	4th Drawer Lift-Up Motor's failure to turn	
PF-2D/AD-5 *	C0d00	Duplex Unit Front/Rear Edge Guide Plates home position detection failure	See PF-2D/AD-5 Service Manual.
	C0d20	Duplex Unit Trailing Gate Unit home position detection failure	
	C0d50	Duplex Unit Drive Motor's failure to turn	
	C0d51	Duplex Unit Drive Motor turning at abnormal timing	
PF-102 *	C0990	Main Tray upward motion failure	See PF-102 Service Manual.
	C0991	Main Tray downward motion failure	
	C0992	Main Tray downward motion failure	
	C0993	Main Tray upward motion failure	
	C0994	Main Tray Elevator Motor's failure to turn	
	C0996	3rd Drawer lock release failure	
	C0998	Shifter transfer failure	
	C0999	Shifter return failure	
	C099A	Shifter return failure	
	C099b	Shifter transfer failure	
	C099c	Shift Motor's failure to turn	
	C0F79	<ul style="list-style-type: none"> 3rd Drawer Paper Empty Sensor failure Main Tray Paper Empty Board failure Shift Tray Paper Empty Sensor 	

	Code	Description	Detection Timing
C-301 *	C09C0	Elevator ascent failure	Refer to the C-301 Service Manual.
	C09C2	Elevator descent failure	
ST-206/ S-205	C0b00 C0b01	Transport drive malfunction	See ST-206/S-205 Service Manual.
ST-101/ S-104	*C0b60 *C0b61	Bin motion failure	See ST-206/S-205 and ST-101/S-104 Service Manuals.
ST-206/ S-205	*C0b62		
	*C0b63		
	*C0b64		
ST-101 ST-206	*C0b10 *C0b11	Paper Clamp Unit motion failure	See ST-206/S-205 and ST-101/S-104 Service Manuals.
ST-206	*C0b12 *C0b13		See ST-206/S-205 Service Manual.
ST-101 ST-206	*C0b30 C0b31	Paper Aligning Mechanism drive failure	See ST-206/S-205 and ST-101/S-104 Service Manuals.
	C0b50	Stapling failure	
	*C0b51		
	C0b52		
ST-206	*C0b70 *C0b71	Hole punching failure	See ST-206/S-205 Service Manual.

2. Troubleshooting Procedures

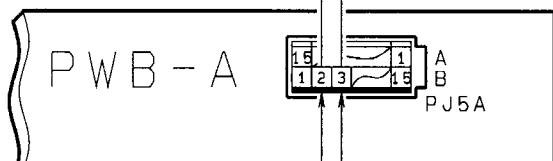
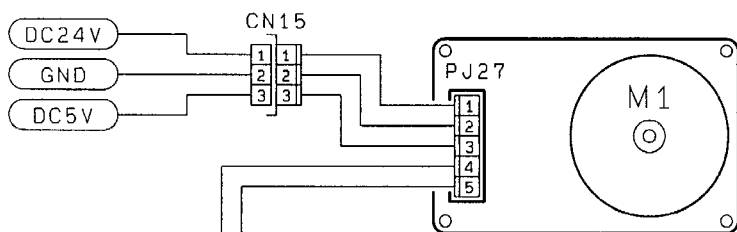
2-1. C0000: Main Drive Motor M1's Failure to Turn

C0010: Main Drive Motor M1 Turning at Abnormal Timing



1136T012AA

Symbol	Name
M1	Main Drive Motor
PWB-A	Master Board



<ポートチェック 3/8>

IC Port Data 3/8

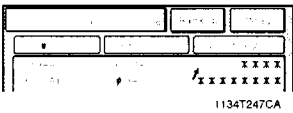
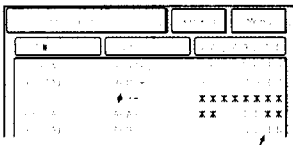
M1	ポート Port	
ON	IC5A	0
OFF	BPC7	1

<ポートチェック 2/8>

IC Port Data 2/8

M1	ポート Port	
回転時 ROTATION	IC5A	L
停止時 LOCK	APB1	H

1134C07TAA

Step	Check Item	Result	Action
1	Do as described below to check whether M1 rotates or not when the Start Key is turned ON (see T-4): 1) Make sure that the port is BPC7 on PWB-A (IC5A). 2) Select "I/O Port Data".		
	3) Is the data of BPC7 on PWB-A (IC5A) "1"?  <p>1134T247CA</p>	NO	Change PWB-A.
	4) By pressing the "Change" key to change the data from "1" to "0", does M1 rotate?	YES	To Step 3.
2	Do as described below to check the input signal (Main Drive Motor Lock signal) when M1 is at a stop (see T-4): 1) Make sure that the port is APB1 on PWB-A (IC5A). 2) Select "I/O Port Data".		
	3) Is the data of APB1 on PWB-A (IC5A) "H"?  <p>1134T183CB</p>	YES	Change PWB-A.
		NO	Change M1.
3	Does M1 rotate with unusual sound?	YES	Check the roller, gears, belt, etc. for overload.

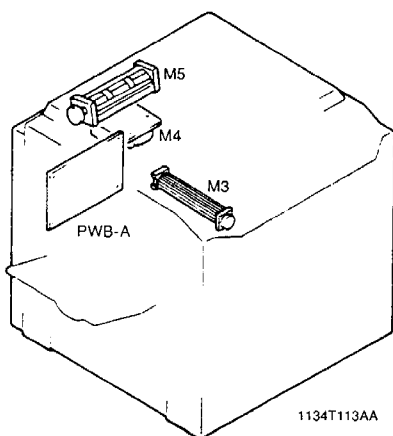
2-2. C0040: Suction Fan Motor M4's Failure to Turn

C004A: Original Glass Cooling Fan Motor M5's Failure to Turn

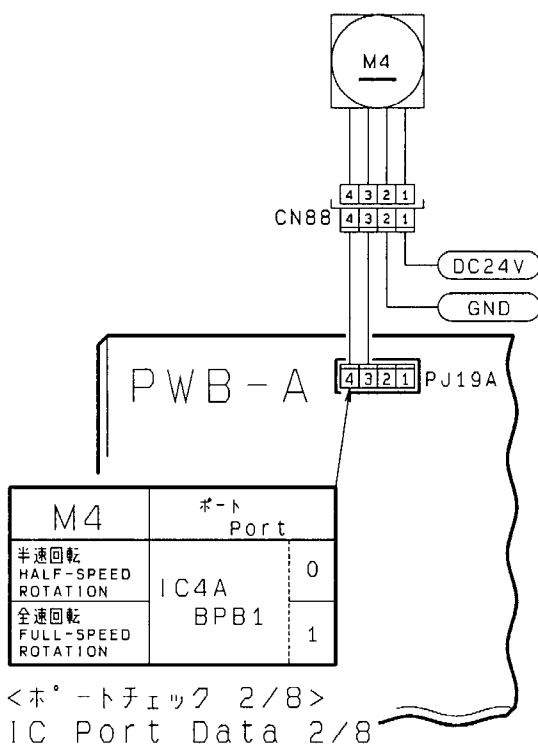
C004b: Original Glass Cooling Fan Motor M5 Turning at Abnormal Timing

C004c: Exhaust Fan Motor M3's Failure to Turn

C004d: Exhaust Fan Motor M3 Turning at Abnormal Timing



Symbol	Name
M3	Exhaust Fan Motor
M4	Suction Fan Motor
M5	Original Glass Cooling Fan Motor
PWB-A	Master Board

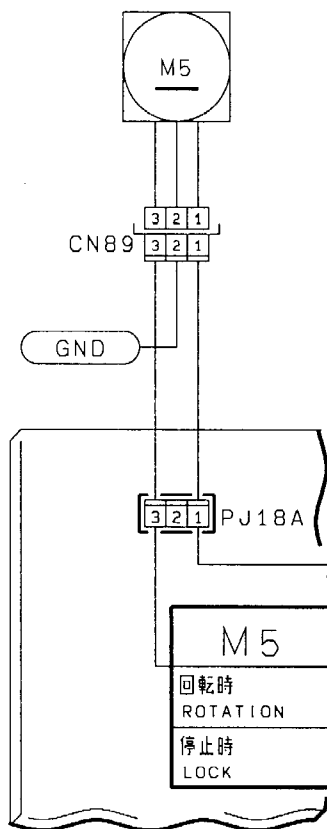


1134C09TCA

* C0040

Step	Check Item	Result	Action
1	Do as described below to check the input signal (Suction Fan Motor Lock signal) (see T-4): 1) Make sure that the port is BPB1 on PWB-A (IC4A). 2) Select "I/O Port Data".		
	3) Is the data of BPB1 on PWB-A (IC4A) "L"?	YES	Change PWB-A.
	<div><div>IC Port Data</div><div>2/8</div><div>BackUp</div><div>Menu</div></div> <div><div>IC #</div><div>Port</div><div>7 6 5 4/3 2 1 0</div></div> <div><div>PWB-A</div><div>BPB7-0</div><div>L H H H H L L H</div></div> <div><div>(IC4A)</div><div>BPC7-0</div><div>H L L L L H H H</div></div> <div><div>3-0</div><div>x x x x x x x x</div></div>	NO	Change M4.

1134T184CA



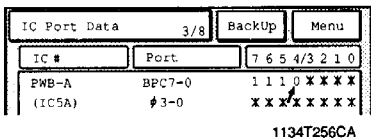
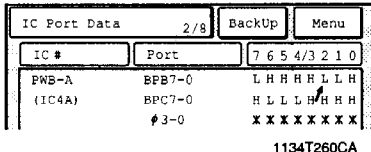
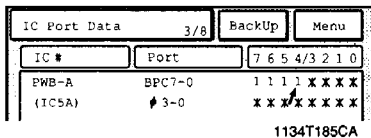
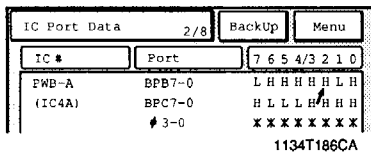
<ポートチェック 3/8>
IC Port Data 3/8

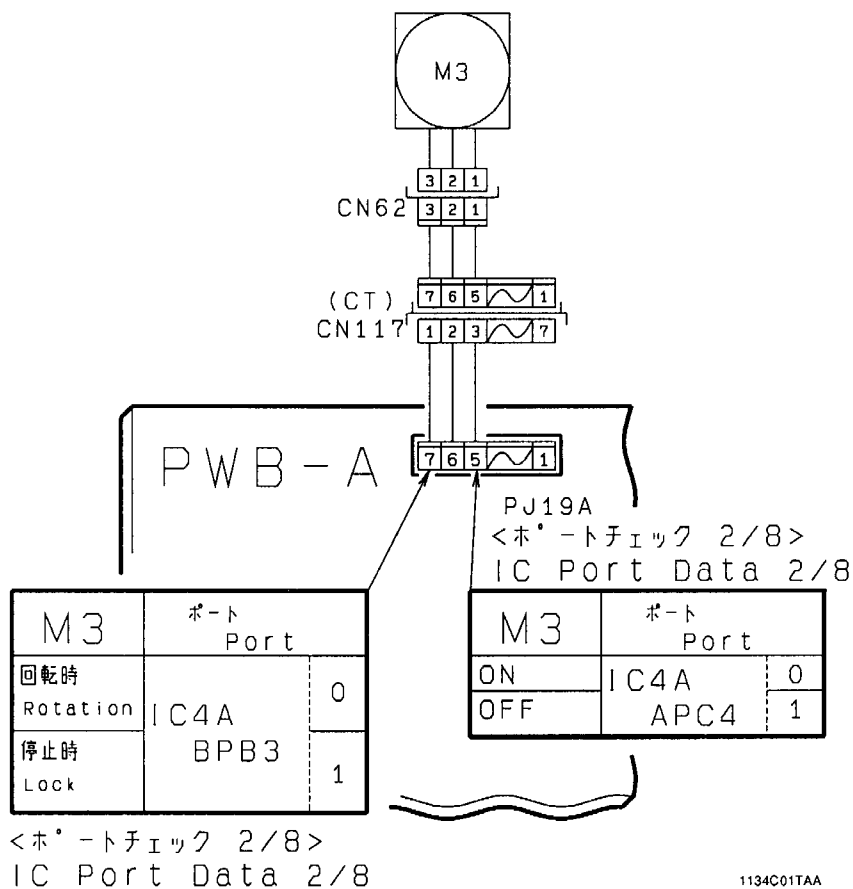
M5	ポート Port	
ON	IC5A	0
OFF	BPC4	1

M5	ポート Port	
回転時 ROTATION	IC4A BPB2	L
停止時 LOCK		H

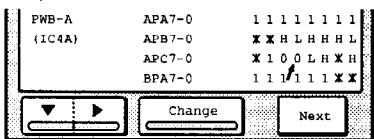
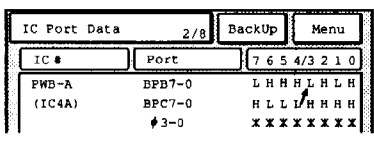
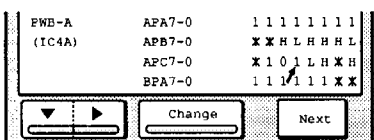
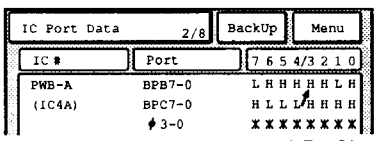
<ポートチェック 2/8>
IC Port Data 2/8

1134C35TCA

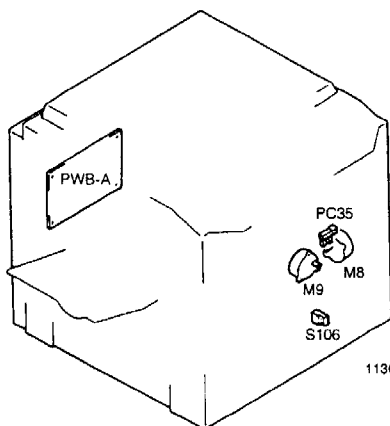
Step	Check Item	Result	Action
1	Is C004A being shown?	NO	To Step 5.
2	<p>Do as described below to check whether M5 rotates. (see T-4, 5):</p> <p>1) Make sure that the port is BPC4 on PWB-A (IC5A).</p> <p>2) Select "I/O Port Data".</p> <p>3) By pressing the "Change" key to change the data from "1" to "0", does M5 rotate?</p> 	NO	To Step 4.
3	<p>Do as described below to check the input signal (Original Glass Cooling Fan Motor Lock signal). (see T-3):</p> <p>1) Make sure that the port is BPB2 on PWB-A (IC4A).</p> <p>2) Select "I/O Port Data".</p> <p>3) Is the data of BPB2 on PWB-A (IC4A) "L"?</p> 	YES	Change PWB-A.
		NO	Change M5.
4	By making a "Board Check" via "I/O Check" in the Tech Rep. mode, is the malfunction code "C0300" displayed?	YES	Change PWB-A.
		NO	Change M5.
5	<p>Do as described below to check the input signal (Original Glass Cooling Fan Motor Remote signal). (see T-4):</p> <p>1) Make sure that the port is BPC4 on PWB-A (IC5A).</p> <p>2) Select "I/O Port Data".</p> <p>3) Is the data of BPC4 on PWB-A (IC5A) "1"?</p> 	NO	Change PWB-A.
6	<p>Do as described below to check the input signal (Original Glass Cooling Fan Motor Lock signal). (see T-3):</p> <p>1) Make sure that the port is BPB2 on PWB-A (IC4A).</p> <p>2) Select "I/O Port Data".</p> <p>3) Is the data of BPB2 on PWB-A (IC4A) "H"?</p> 	YES	Change PWB-A.
		NO	Change M5.



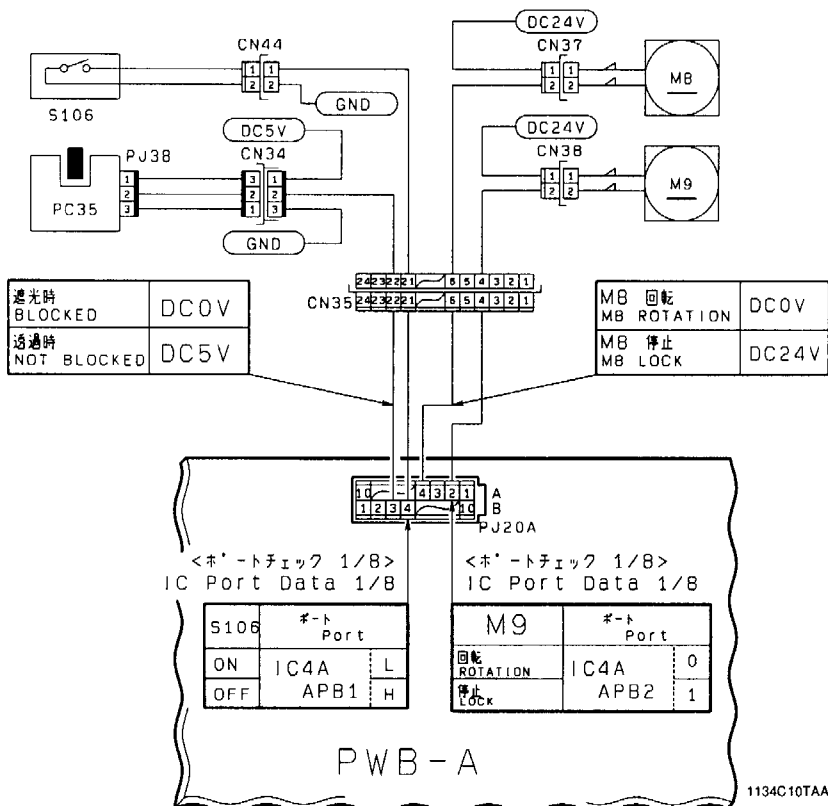
1134C01TAA

Step	Check Item	Result	Action
1	Is C004C being shown?	NO	To Step 5.
2	<p>Do as described below to check whether M3 rotates. (see T-4, 5):</p> <p>1) Make sure that the port is APC4 on PWB-A (IC4A).</p> <p>2) Select "I/O Port Data".</p> <p>3) By pressing the "Change" key to change the data from "1" to "0", does M3 rotate?</p>  <p>1134T258CA</p>	NO	To Step 4.
3	<p>Do as described below to check the input signal (Original Glass Cooling Fan Motor Lock signal). (see T-3):</p> <p>1) Make sure that the port is BPB3 on PWB-A (IC4A).</p> <p>2) Select "I/O Port Data".</p> <p>3) Is the data of BPB3 on PWB-A (IC4A) "L"?</p>  <p>1134T261CA</p>	YES	Change PWB-A.
4	By making a "Board Check" via "I/O Check" in the Tech Rep. mode, is the malfunction code "C0300" displayed?	YES	Change PWB-A.
		NO	Change M3.
5	<p>Do as described below to check the input signal (Original Glass Cooling Fan Motor Remote signal). (see T-4):</p> <p>1) Make sure that the port is APC4 on PWB-A (IC4A).</p> <p>2) Select "I/O Port Data".</p> <p>3) Is the data of APC4 on PWB-A (IC4A) "1"?</p>  <p>1134T187CA</p>	NO	Change PWB-A.
6	<p>Do as described below to check the input signal (Original Glass Cooling Fan Motor Lock signal). (see T-3):</p> <p>1) Make sure that the port is BPB3 on PWB-A (IC4A).</p> <p>2) Select "I/O Port Data".</p> <p>3) Is the data of BPB3 on PWB-A (IC4A) "H"?</p>  <p>1134T188CA</p>	YES	Change PWB-A.
		NO	Change M3.

2-3. C0070: Main Hopper Toner Replenishing Motor M8's Failure to Turn
C0071: Main Hopper Toner Replenishing Motor M8 Turning at
Abnormal Timing
C0072: Sub Hopper Toner Replenishing Motor M9's Failure to Turn



Symbol	Name
M8	Main Hopper Toner Replenishing Motor
M9	Sub Hopper Toner Replenishing Motor
PC35	Toner Bottle Home Position Sensor
S106	Sub Hopper Toner Empty Switch
PWB-A	Master Board



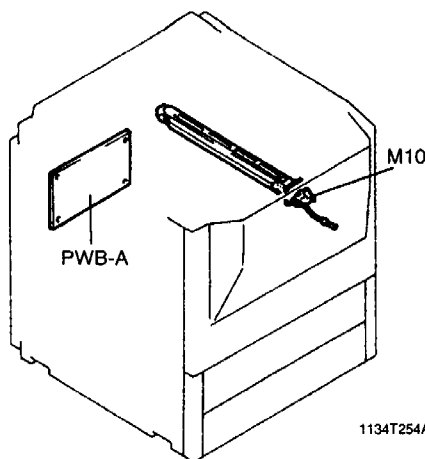
* C0070, C0071

Step	Check Item	Result	Action
1	Is PJ20A securely plugged into PWB-A?	NO	Plug it in securely.
2	Is CN35 connected securely?	NO	Connect it securely.
3	Are CN37 and CN34 connected securely?	NO	Connect them securely.
4	Open the Front Door and turn the Toner Bottle 1/4 turn clockwise manually with the Bottle Holder closed. Under the above condition, Does the Toner Bottle turn when the Front Door Inter Lock Switch is turned on?	NO	To Step 6.
5	Does the Toner Bottle stop at Home Position after turning?	YES	Change PWB-A.
		NO	Change PC35.
6	Is the Voltage across PJ20AA-4 and GND DC0V when it is checked while repeating Step 4?	YES	Change M8.
		NO	Change PWB-A.

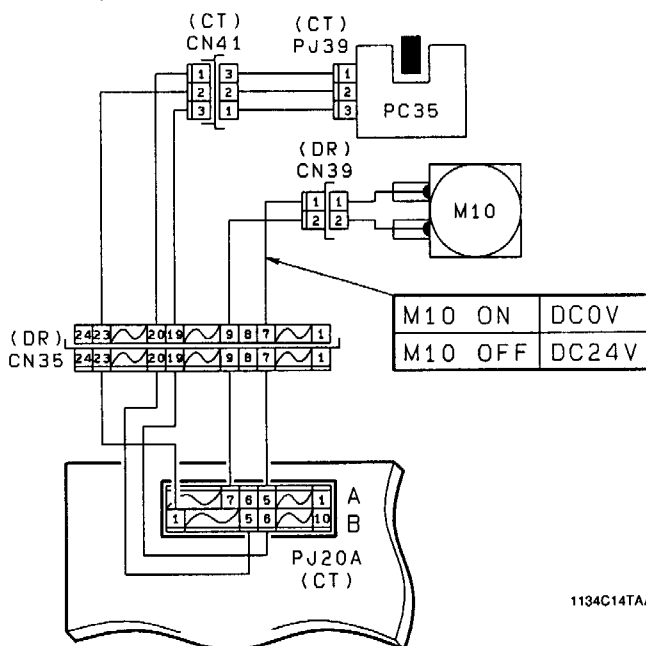
* C0072

Step	Check Item	Result	Action												
1	Is PJ20A securely plugged into PWB-A?	NO	Plug it in securely.												
2	Is CN35 connected securely?	NO	Connect it securely.												
3	Are CN38 and CN44 connected securely?	NO	Connect them securely.												
4	Is the amount of toner in the Sub Hopper so scarce that the system detects a toner-empty condition?	NO	To Step 6.												
5	Do as described below to check the input signal from S106 on detection of a toner empty condition (see T-3): 1) Make sure that the port is APB1 on PWB-A (IC4A). 2) Select "I/O Port Data".														
	3) Is the data of APB1 on PWB-A (IC4A) "L"?	NO	Change S106.												
	<table><tr><td rowspan="4"> </td><td>(IC4A)</td><td>APB7-0</td><td>XXHLHLL</td></tr><tr><td></td><td>APC7-0</td><td>X101LHXX</td></tr><tr><td></td><td>BPA7-0</td><td>111111XX</td></tr><tr><td></td><td></td><td>1134T189CA</td></tr></table>		(IC4A)	APB7-0	XXHLHLL		APC7-0	X101LHXX		BPA7-0	111111XX			1134T189CA	YES
	(IC4A)		APB7-0	XXHLHLL											
			APC7-0	X101LHXX											
			BPA7-0	111111XX											
			1134T189CA												
6	Check the output signal to M9 as described below (see T-4): 1) Make sure that the port is APA2 on PWB-A (IC4A). 2) Select "I/O Port Data".														
	3) Is the data of APA2 on PWB-A (IC4A) "0"?	YES	Change M9.												
	<table><tr><td rowspan="4"> </td><td>PWB-A</td><td>APA7-0</td><td>11111011</td></tr><tr><td>(IC4A)</td><td>APB7-0</td><td>XXHLHLL</td></tr><tr><td></td><td>APC7-0</td><td>X101LHXX</td></tr><tr><td></td><td></td><td>1134T190CA</td></tr></table>		PWB-A	APA7-0	11111011	(IC4A)	APB7-0	XXHLHLL		APC7-0	X101LHXX			1134T190CA	NO
	PWB-A		APA7-0	11111011											
	(IC4A)		APB7-0	XXHLHLL											
			APC7-0	X101LHXX											
			1134T190CA												

2-4. C0100: Charge Corona Wire Winding Failure

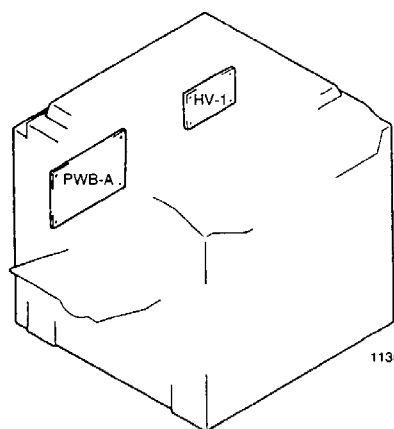


Symbol	Name
M10	PC Drum Charge Corona Wire Winding Motor
PWB-A	Master Board



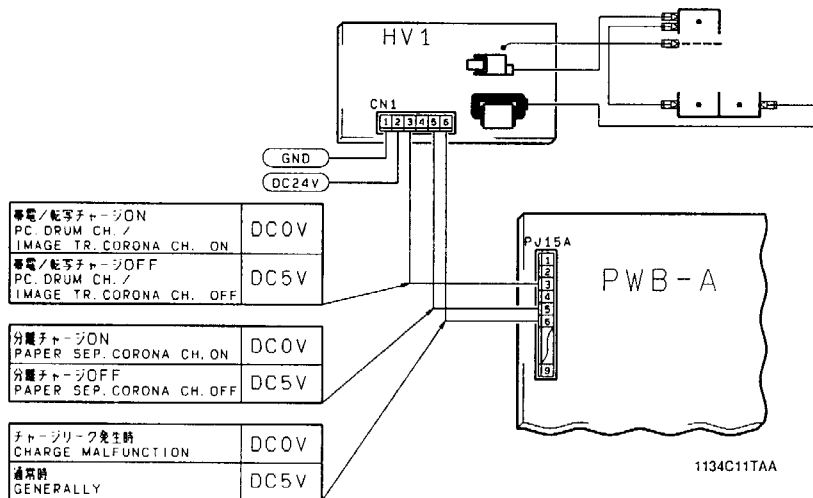
Step	Check Item	Result	Action
1	Is PJ20AA securely plugged into PWB-A?	NO	Plug it in securely.
2	Is CN35 connected securely?	NO	Connect it securely.
3	Are CN39 and CN41 connected securely?	NO	Connect them securely.
4	Does the voltage across PJ20AA-7 on PWB-A and GND change from 24V to 0V during wire winding?	YES	Change M10 or PC Drum Charge Corona.
		NO	Change PWB-A.

2-5. C0200: PC Drum Charge, Image Transfer/Paper Separator Coronas Failure



1136T015AA

Symbol	Name
HV1	High Voltage Unit
PWB-A	Master Board



Step	Check Item	Result	Action
1	Does "C0200" remain shown even after the PC Drum Charge and Image Transfer/Paper Separator Coronas have been removed from the copier?	YES	Perform step 4.
2	Does "C0200" appear when the PC Drum Charge Corona is installed in the copier?	YES	Clean or replace the PC Drum Charge Corona.
3	Does "C0200" appear when the Image Transfer/Paper Separator Coronas are installed in the copier?	YES	Clean or replace the Image Transfer/Paper Separator Coronas.
4	Does "C0200" remain shown even after CN1 has been unplugged from HV1?	NO	Replace HV1.
		YES	Replace PWB-A.

2-6. C03XX (Control Board, Harness malfunction)

* C0300 to C0335

Step	Action
	Change EP3050/EP4050 PWB-A.

* C0350, C0370

Step	Action
1	Check that PJ10A is securely plugged into EP3050/EP4050 PWB-A and PJ7F into PWB-F.
2	Change PWB-F or EP3050/EP4050 PWB-A.

* C0351, C0352

Step	Action
1	Check that the connector for connection of the copier and Paper Feed Cabinet is without fault.
2	Check that PJ2A is plugged into PF-202/PF-102 PWB-A properly.
3	Change EP3050/EP4050 PWB-A or PF-202/PF-102 PWB-A.

* C0353

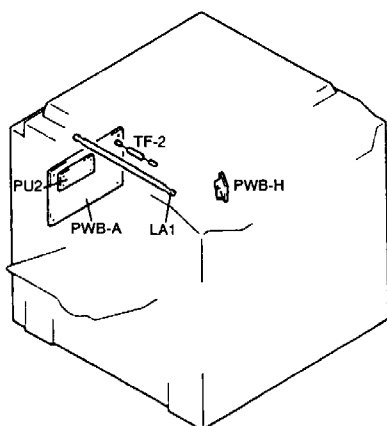
Step	Action
1	Check that the connector for connection of the copier and Paper Feed Cabinet is without fault.
2	Check that PJ2A is plugged into PF-202/PF-102 PWB-A properly.
3	Check that the connector for connection of the AD-5 and Paper Feed Cabinet is without fault.
4	Check that PJ8G is plugged into PWB-G properly.
5	Change EP3050/EP4050 PWB-A, PF-202/PF-102 PWB-A or PWB-G.

* C0354, C0374

Step	Action
1	Check that the connector for connection of the copier and Paper Feed Cabinet is without fault.
2	Check that CN1A is plugged into C-301 PWB-A properly.
3	Change EP3050/EP4050 PWB-A or C-301 PWB-A.

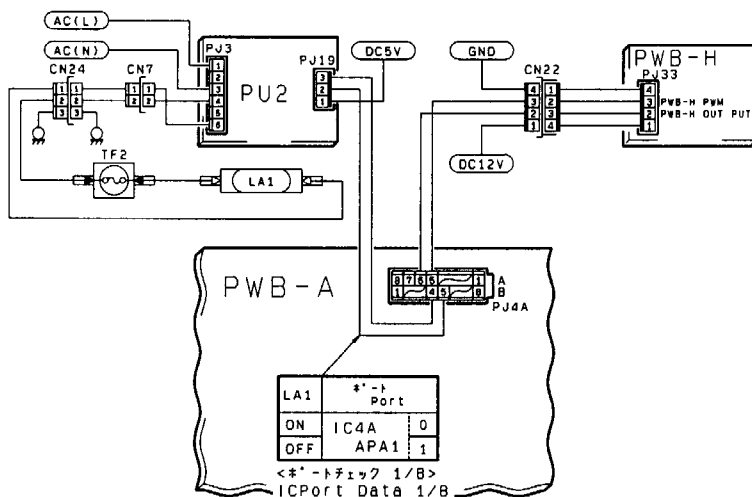
2-7. C0400: Exposure Lamp LA1's Failure to Turn ON

C0410: Exposure Lamp LA1 Turning ON at Abnormal Timing

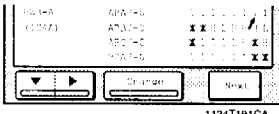


Symbol	Name
LA1	Exposure Lamp
TF2	Exposure Lamp Thermal Fuse
PWB-A	Master Board
PWB-H	AE Sensor Board
PU2	Power Supply Unit

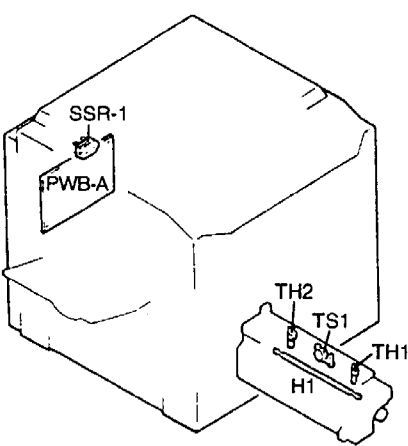
1136T016AA



1134C12TAA

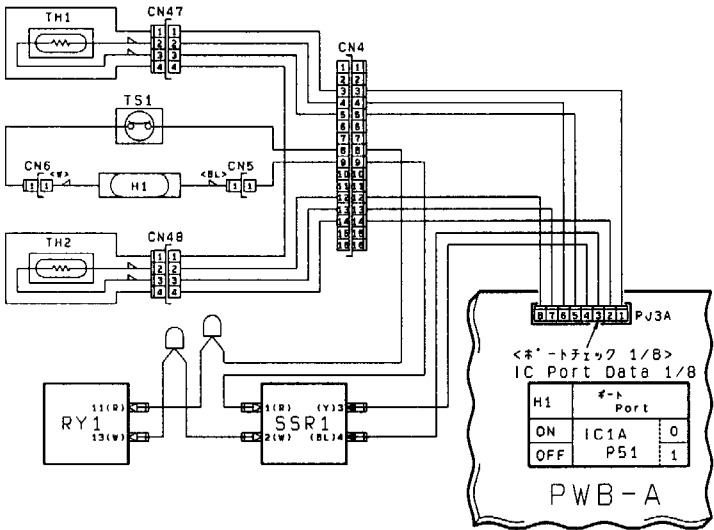
Step	Check Item	Result	Action
1	Do as described below to check whether the Exposure Lamp LA1 turns ON or not when the Start Key is turned ON (see T-4): 1) Make sure that the port is APA1 on PWB-A (IC4A). 2) Select "I/O Port Data".		
	3) Is the data of APA1 on PWB-A (IC4A) "1"? 	NO	Change PWB-A.
	4) By pressing the "Change" key to change the data from "1" to "0", does LA1 turn ON?	YES	To Step 4.
2	Is the circuit across CN7-1 and -2 on the LA1 side conductive when CN7 (2P) is disconnected?	NO	Check LA1 and Exposure Lamp Thermal Fuse TF2 for continuity.
3	Is the voltage across PJ3-1 and -3 on the Power Supply Unit PU2 the power supply voltage AC100V?	YES	Change PU2.
		NO	Check the power supply line.
4	Is the voltage across PJ4AA-6 and GND 4.0V or less when the Power Switch is turned ON or the copier is in the standby state?	YES	Clean the AE Sensor or change PWB-H.
		NO	Change PWB-A.

2-8. C0500: Warming-Up Failure
C0510: Abnormally Low Fusing Temperature
C0520: Abnormally High Fusing Temperature
C0522: Fusing Front/Rear Thermistor TH1/2 Malfunction

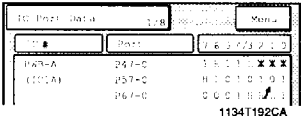


Symbol	Name
H1	Fusing Heater Lamp
TS1	Fusing Thermoswitch
TH1	Fusing Front Thermistor
TH2	Fusing Rear Thermistor
SSR1	SSR
PWB-A	Master Board

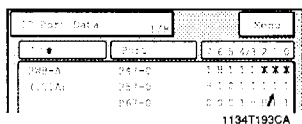
1136T017AA



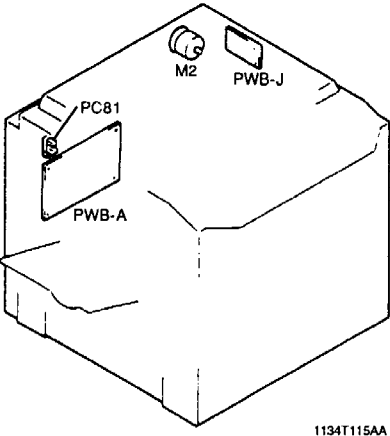
1134C13TAA

Step	Check Item	Result	Action
1	Does the Fusing Heater Lamp H1 light up when the Power Switch is turned ON?	YES	Check the installation of the Fusing Front/Rear Thermistor TH1/TH2 or clean TH1/TH2.
		NO	To Step 4.
2	Disconnect CN47 (4P). Is the resistance across CN47-2 and 3 on the Fusing Unit side infinite?	YES	Change TH1.
		NO	Change PWB-A.
3	Disconnect CN48 (4P). Is the resistance across CN48-2 and 3 on the Fusing Unit side infinite?	YES	Change TH2.
		NO	Change PWB-A.
4	<p>Check the H1 ON/OFF signal from the Master Board with the Power Switch ON and the Front Door closed (see T-4):</p> <p>1) Make sure that the port is P51 on PWB-A (IC1A).</p> <p>2) Select "I/O Port Data".</p> <p>3) Is the data of P51 on PWB-A (IC1A) "0"?</p> 	NO	Change PWB-A.
5	Disconnect CN4 (16P). Is there continuity across CN4-8 and 9 on the Fusing Unit side?	YES	Change SSR.
		NO	Check H1 and Fusing Thermoswitch TS1 for continuity.

Step	Check Item	Result	Action
1	Does the Fusing Heater Lamp H1 remain lit up after the copier has completed warming up?	YES	To Step 2.
		NO	To Step 3, 4.
2	Check whether H1 is turned OFF or not by changing the H1 ON/OFF signal from the Master Board (see T-4): 1) Make sure that the port is P51 on PWB-A (IC1A). 2) Select "I/O Port Data".		
	3) Is the data of P51 on PWB-A (IC1A) "1"?	NO	Change PWB-A.
	4) By pressing the "Change" key to change the data from "1" to "0", is H1 turned OFF?	NO	Change SSR.
3	Disconnect CN47 (4P). Is the circuit across CN47-2 and 3 on the Fusing Unit side shorted?	YES	Change TH1.
		NO	Change PWB-A.
	Disconnect CN48 (4P). Is the circuit across CN48-2 and 3 on the Fusing Unit side shorted?	YES	Change TH2.
		NO	Change PWB-A.

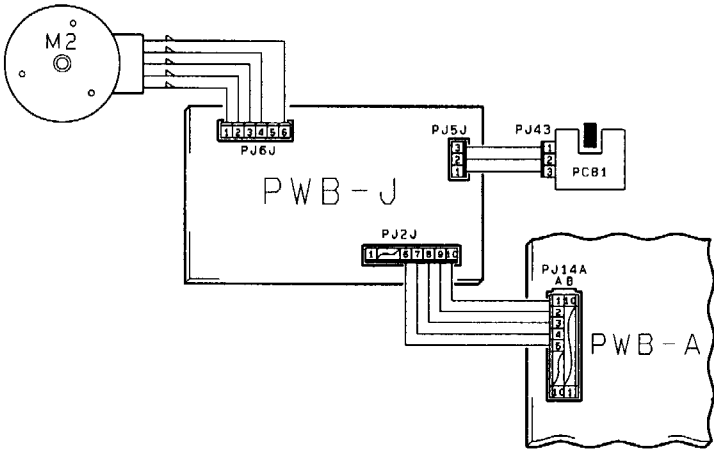


- 2-9. C0600: Scanner Motor M2 Malfunction
- C0601: SCP Board PWB-J Malfunction
- C0650: Scanner Reference Position Sensor PC81 Malfunction
- C0660: Scanner Load Failure
- C06F0 to C06F7: SHOME, BASE, TRON, SCEND Signal Failure



Symbol	Name
PC81	Scanner Reference Position Sensor
M2	Scanner Motor
PWB-J	SCP Board
PWB-A	Master Board

1134T115AA



1136C14TAA

* C0600, C0601

Step	Check Item	Result	Action
1	Is PJ6J securely plugged into PWB-J?	NO	Plug it in securely.
2	Is the voltage across PJ6J-6 on PWB-J and GND DC5V when the Power Switch is turned ON?	NO	Check the DC5V line.
3	Is C0600 being shown?	YES	Replace M2.
4	Is C0601 being shown?	YES	Replace PWB-J.

* C0650

Step	Check Item	Result	Action
1	Is PJ5J securely plugged into PWB-J and PJ43 into PC81?	NO	Plug them in securely.
2	Is the Light Blocking Plate installed properly?	NO	Reinstall it.
		YES	Replace PC81.

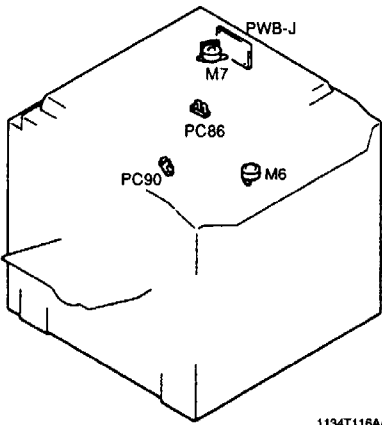
* C0660

Step	Check Item	Result	Action
1	Do you feel an overload when you move the Scanner manually with the Power Switch OFF?	YES	Correct or replace the Cables or part being overloaded.

* C06F0 to C06F7

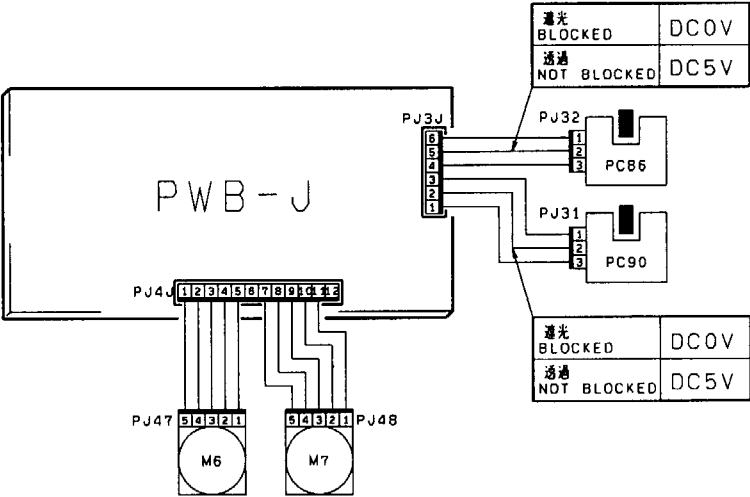
Step	Check Item	Result	Action
1	Is PJ14AA securely plugged into PWB-A and PJ2J into PWB-J?	NO	Plug them in securely.
		YES	Replace PWB-A or PWB-J.

2-10. C0610: Lens Motion Failure
 C0620: 4th/5th Mirrors Motion Failure



Symbol	Name
PC86	Mirror Reference Position Sensor
PC90	Lens Reference Position Sensor
M6	Lens Motor
M7	Mirror Motor
PWB-J	SCP Board

1134T116AA



1136C15TAA

* C0610

Step	Check Item	Result	Action
1	Are PJ4J and PJ3J plugged securely into PWB-J, PJ47 into M6, and PJ31 into PC90?	NO	Plug them in securely.
2	Does the voltage across PJ3J-2 on PWB-J and GND change from DC5V to DC0V when PC90 is blocked?	NO	Replace PC90.
3	Do you feel an overload when you move the Lens manually with the Power Switch OFF?	YES	Correct or replace the Cable or part being overloaded.
		NO	Replace M6 or PWB-J.

* C0620

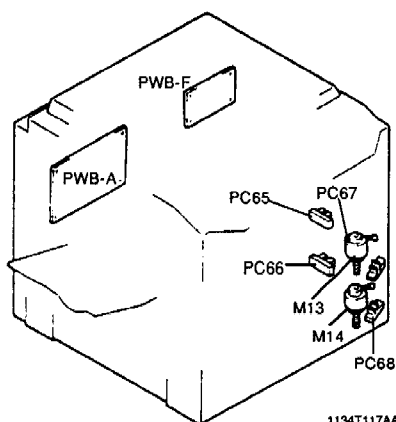
Step	Check Item	Result	Action
1	Are PJ4J and PJ3J plugged securely into PWB-J, PJ48 into M7, and PJ32 into PC86?	NO	Plug them in securely.
2	Does the voltage across PJ3J-5 on PWB-J and GND change from DC5V to DC0V when PC86 is blocked?	NO	Replace PC86.
3	Do you feel an overload when you move the 4th/5th Mirrors manually with the Power Switch OFF?	YES	Correct or replace the part being overloaded.
		NO	Replace M7 or PWB-J.

2-11. C0910: 2nd Drawer Paper Lift-Up Failure

C0914: 2nd Drawer Paper Lift-Up Motor M14's Failure to Turn

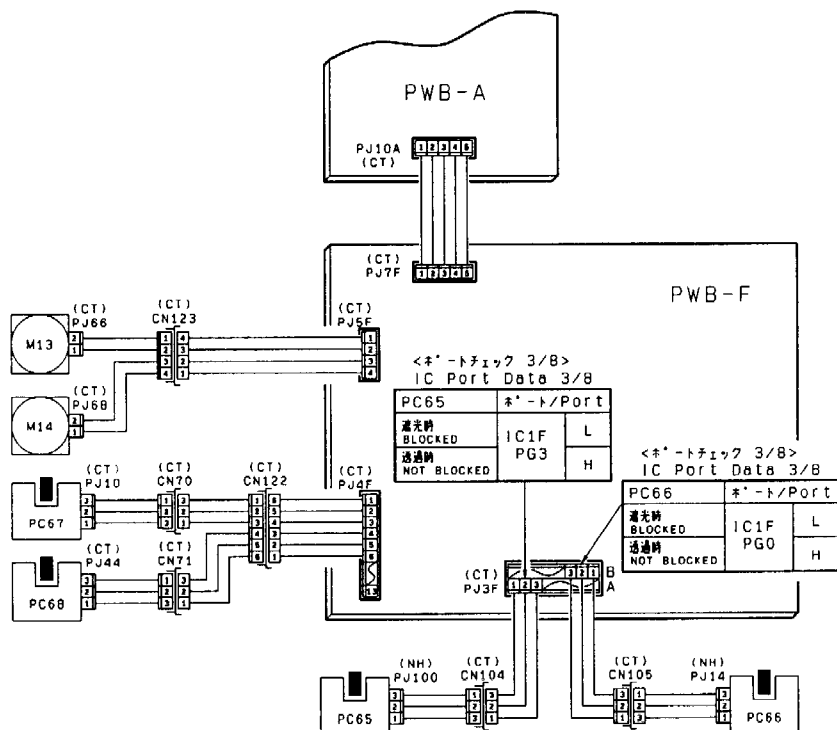
C0920: 1st Drawer Paper Lift-Up Failure

C0924: 1st Drawer Paper Lift-Up Motor M13's Failure to Turn

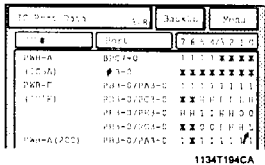
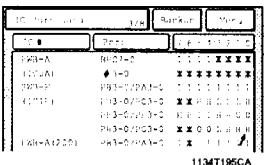


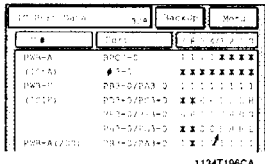
1134T117AA

Symbol	Name
PC65	1st Drawer Paper Lift-Up Sensor
PC66	2nd Drawer Paper Lift-Up Sensor
PC67	1st Drawer Paper Lift-Up Motor Pulse Sensor
PC68	2nd Drawer Paper Lift-Up Motor Pulse Sensor
M13	1st Drawer Paper Lift-Up Motor
M14	2nd Drawer Paper Lift-Up Motor
PWB-F	S/P Board
PWB-A	Master Board

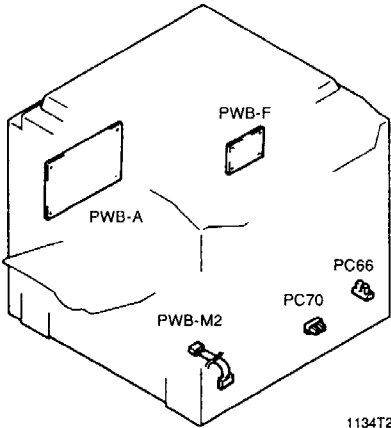


1134C08TAA

Step	Check Item	Result	Action
1	Slide out the 2nd Drawer and check the 2nd Drawer Paper Lift-Up Sensor PC66 as described below (see T-3): 1) Make sure that the port is PG0 on PWB-F (IC1F). 2) Select "I/O Port Data". 3) Is the data of PG0 on PWB-F (IC1F) "L"?	NO	Check the Pressure Release mechanism of the Paper Take-Up Roll.
			
	4) Press down the Paper Take-Up Roll Assy to unblock PC66.	YES	Change PWB-F or PWB-A.
	5) Select "I/O Port Data" again. Has the data of PG0 on PWB-F (IC1F) changed from "L" to "H"?	NO	Change PC66.
			

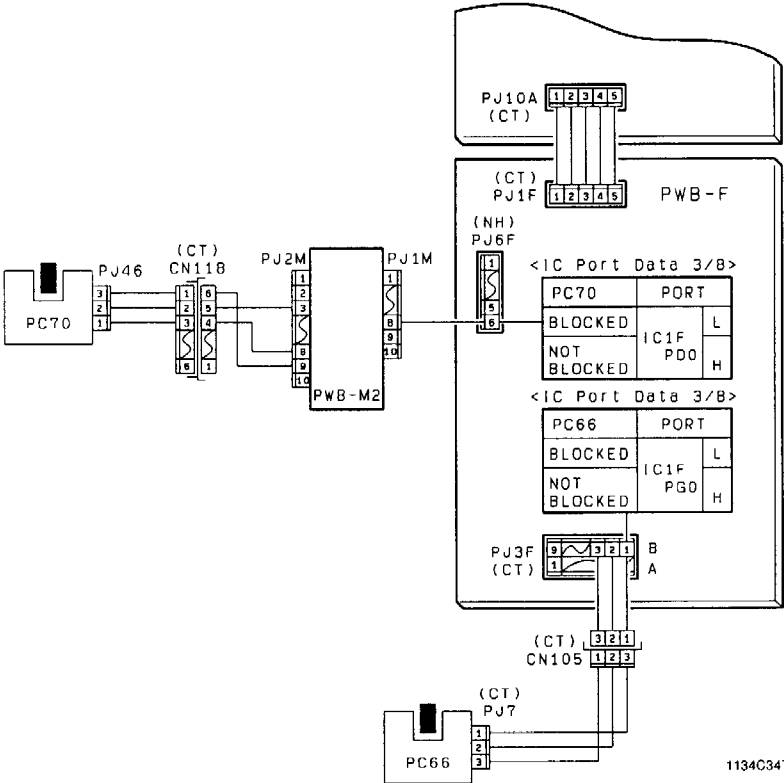
Step	Check Item	Result	Action
1	Slide out the 1st Drawer and check the 1st Drawer Paper Lift-Up Sensor PC65 as described below (see T-3): 1) Make sure that the port is PG3 on PWB-F (IC1F). 2) Select "I/O Port Data". 3) Is the data of PG3 on PWB-F (IC1F) "L"?	NO	Check the Pressure Release mechanism of the the Paper Take-Up Roll.
			
	4) Press down the Paper Take-Up Roll Assy to unblock PC65.		

2-12.C0911: 2nd Drawer Paper Lower-Down Failure (Inch Area)
C0912: 2nd Drawer Paper Lower-Down Failure, 2nd Drawer Lock Failure
C0913: 2nd Drawer Lock Failure
C0916: 2nd Drawer Lock Release Failure


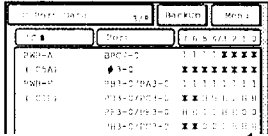


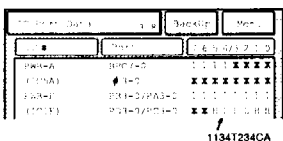
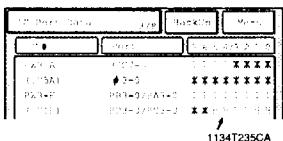
1134T245EA

Symbol	Name
PC66	2nd Drawer Paper Lift-Up Sensor
PC70	2nd Drawer Lowered Position Sensor
PWB-M2	2nd Drawer Interface Board
PWB-F	S/P Board
PWB-A	Master Board



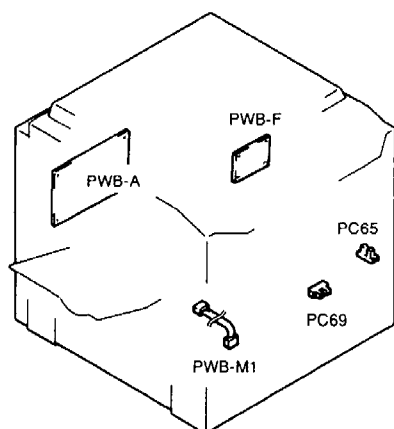
1134C34TBA

Step	Check Item	Result	Action
1	Slide out the 2nd Drawer and check the 2nd Drawer Paper Lift-Up Sensor PC66 as described below (see T-3):		
	1) Make sure that the port is PG0 on PWB-F (IC1F).		
	2) Select "I/O Port Data".		
	3) Is the data of PG0 on PWB-F (IC1F) "L"?	NO	Check the Pressure Release Mechanism of the Paper Take-Up Roll.
	 <p>1134T232CA</p>		
	4) Press down the Paper Take-Up Roll Assy to unblock PC66.		
	5) Select "I/O Port Data" again. Has the data of PG0 on PWB-F (IC1F) changed from "L" to "H"?	YES	Change PWB-M2, PWB-F or PWB-A.
	 <p>1134T233CB</p>	NO	Change PC66.

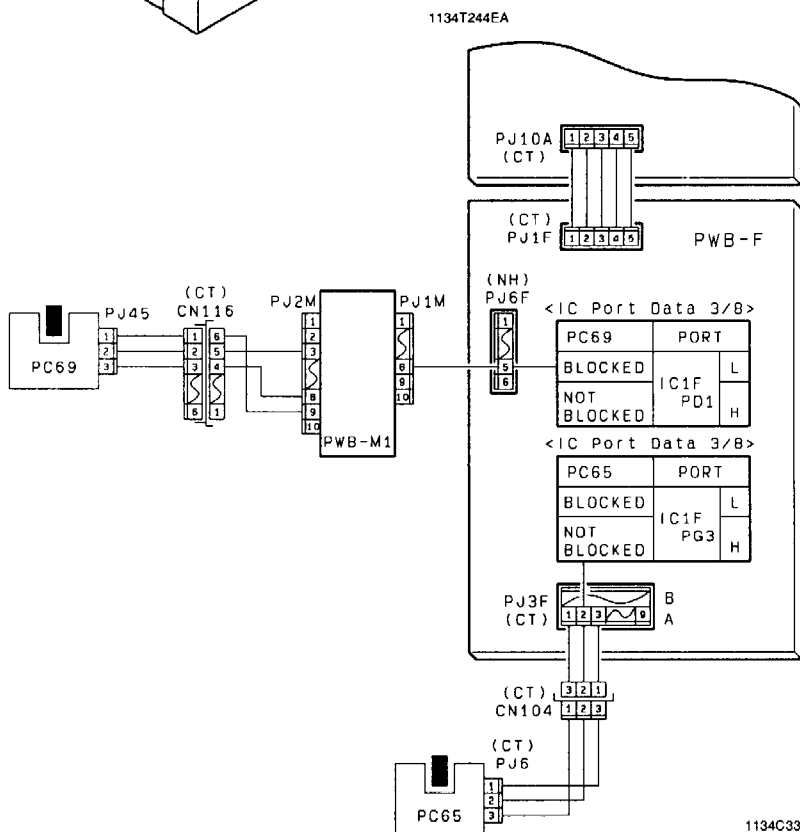
Step	Check Item	Result	Action
1	<p>Check the 2nd Drawer Lowered Position Sensor PC70 as described below (see T-3):</p> <p>1) Make sure that the port is PD0 on PWB-F (IC1F).</p> <p>2) Select "I/O Port Data".</p> <p>-----</p> <p><PC70 is blocked></p> <p>3) Is the data of PD0 on PWB-F (IC1F) "L"?</p> 		
	YES	Change PWB-M2, PWB-F or PWB-A.	
	NO	Change PC70.	
	<PC70 is not blocked>		
	4) Is the data of PD0 on PWB-F (IC1F) "H"?	YES	Change PWB-M2, PWB-F or PWB-A.
		NO	Change PC70.

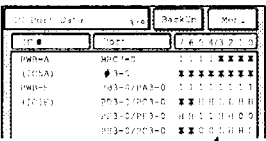
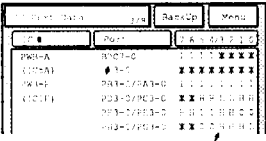
Step	Check Item	Result	Action
1	Remove the Right Door, lift up the Lock Lever with a flat-blade screwdriver to unlock and slide out the 2nd Drawer.		
2	Is the Lock Release Spring Installed properly?	NO	Reinstall or change.
3	Are the Lock Lever and Torsion Spring installed properly?	NO	Reinstall or change.

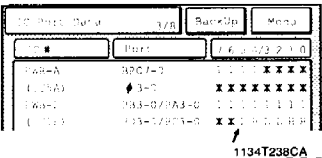
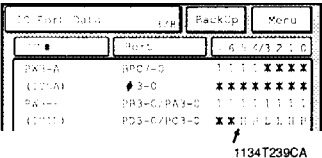
2-13.C0921: 1st Drawer Paper Lower-Down Failure (Inch Area)
C0922: 1st Drawer Paper Lower-Down Failure, 1st Drawer Lock Failure
C0923: 1st Drawer Lock Failure
C0926: 1st Drawer Lock Release Failure



Symbol	Name
PC65	1st Drawer Paper Lift-Up Sensor
PC69	1st Drawer Lowered Position Sensor
PWB-M1	1st Drawer Interface Board
PWB-F	S/P Board
PWB-A	Master Board

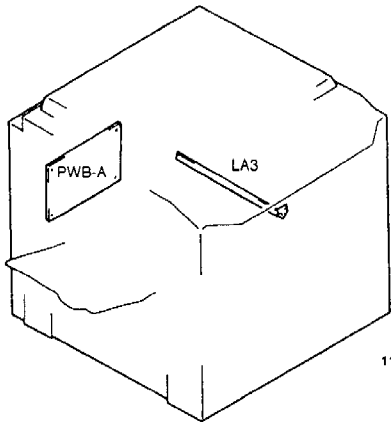


Step	Check Item	Result	Action
1	Slide out the 1st Drawer and check the 1st Drawer Paper Lift-Up Sensor PC65 as described below (see T-3):		
	1) Make sure that the port is PG3 on PWB-F (IC1F).		
	2) Select "I/O Port Data".		
	3) Is the data of PG3 on PWB-F (IC1F) "L"?		
	 <p>1134T236CA</p>	NO	Check the Pressure Release Mechanism of the Paper Take-Up Roll.
	4) Press down the Paper Take-Up Roll Assy to unblock PC65.		
	5) Select "I/O Port Data" again. Has the data of PG3 on PWB-F (IC1F) changed from "L" to "H"?	YES	Change PWB-M1, PWB-F or PWB-A.
	 <p>1134T237CA</p>	NO	Change PC65.

Step	Check Item	Result	Action
1	Check the 1st Drawer Lowered Position Sensor PC69 as described below (see T-3): 1) Make sure that the port is PD1 on PWB-F (IC1F). 2) Select "I/O Port Data".		
	<PC69 is blocked> 3) Is the data of PD1 on PWB-F (IC1F) "L"?	YES	Change PWB-M1, PWB-F or PWB-A.
	 1134T238CA	NO	Change PC69.
	<PC69 is not blocked> 4) Is the data of PD1 on PWB-F (IC1F) "H"?	YES	Change PWB-M1, PWB-F or PWB-A.
	 1134T239CA	NO	Change PC69.

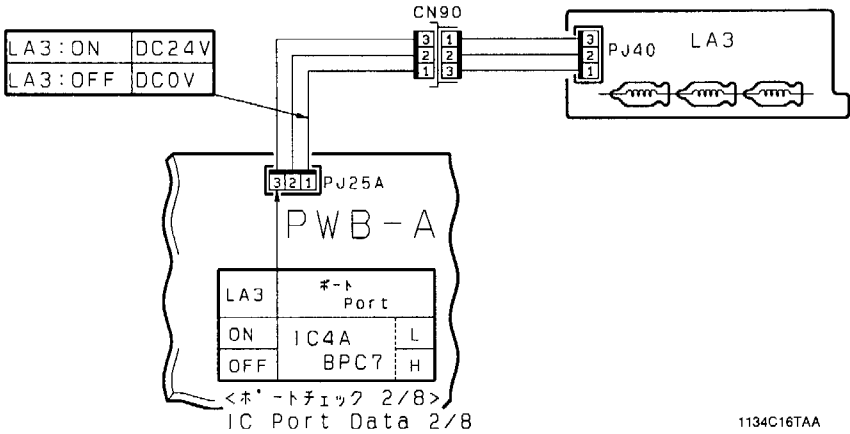
Step	Check Item	Result	Action
1	Remove the Right Door, lift up the Lock Lever with a flat-blade screwdriver to unlock and slide out the 1st Drawer.		
2	Is the Lock Release Spring Installed properly?	NO	Reinstall or change.
3	Are the Lock Lever and Torsion Spring installed properly?	NO	Reinstall or change.

2-14. C0E00: Main Erase Lamp LA3's Failure to Turn ON
 C0E01: Main Erase Lamp LA3 Turning ON at Abnormal Timing



1136T020AA

Symbol	Name
LA3	Main Erase Lamp
PWB-A	Master Board

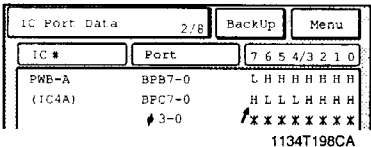


1134C16TAA

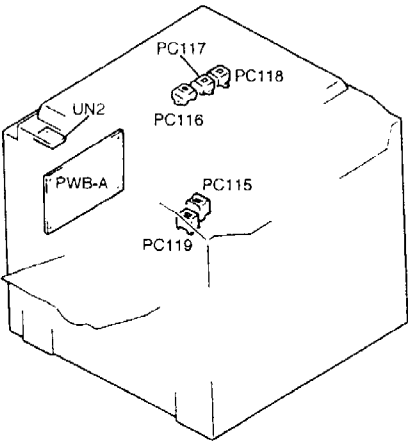
*C0E00

Step	Check Item	Result	Action
1	Does the Main Erase Lamp LA3 light up when the Start Key is turned ON?	YES	Change PWB-A.
2	Does the voltage across PJ25-1 on PWB-A and GND change from DC0V to DC24V when the Start Key is turned ON?	YES	Change LA3.
		NO	Change PWB-A.

*C0E01

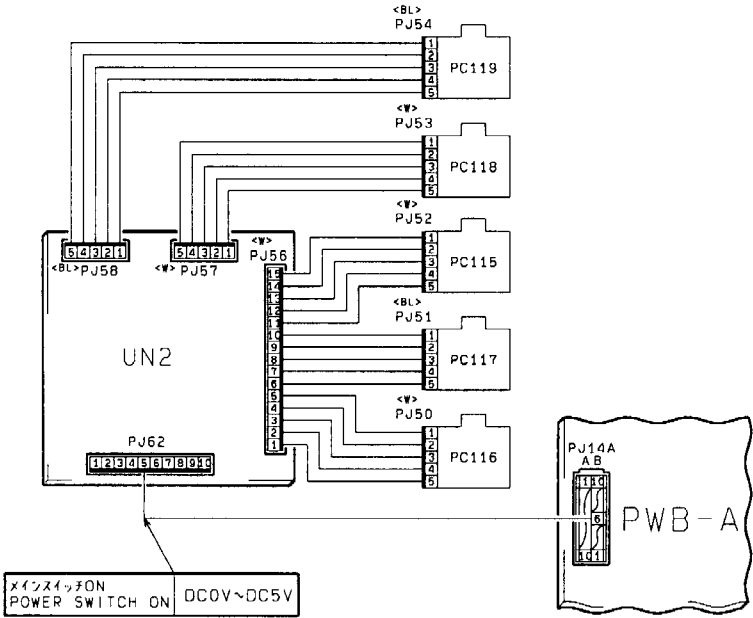
Step	Check Item	Result	Action
1	Do as described below to check the input signal (LA3 Malfunction signal) provided when the Main Erase Lamp LA3 is turned OFF (see T-4): 1) Make sure that the port is BPC7 on PWB-A (IC4A). 2) Select "I/O Port Data".		
	3) Is the data of BPC7 on PWB-A (IC4A) "H"?	YES	Change PWB-A.
	 <p>The screenshot shows the 'IC Port Data' menu with '2/8' pages. It lists 'PWB-A (IC4A)' with 'BPC7-0' data as 'L L L L H H H H'. Below it, '3-0' data is shown as 'L L L L H H H H'. The bottom of the screen displays '1134T198CA'.</p>	NO	Change LA3.

2-16. C0F02: Original Size Detecting Board UN2 Malfunction
 C0FE1 to C0FFF: Original Size Detecting Sensor Failure



Symbol	Name
PC115	Original Size Detecting Sensor CD1
PC116	Original Size Detecting Sensor FD1
PC117	Original Size Detecting Sensor FD2
PC118	Original Size Detecting Sensor FD3
PC119	Original Size Detecting Sensor CD2
UN2	Original Size Detecting Board
PWB-A	Master Board

1136T022AA



1136C18TAA

* C0F02

Step	Check Item	Result	Action
1	Is the jumper connector fitted properly across J1 and J2 on UN2?	NO	Change the position of the jumper connector.
2	Is PJ62 plugged securely into UN2 and PJ14A into PWB-A?	NO	Plug then in securely.
3	Is the voltage across PJ14AB-6 on PWB-A and GND changing between DC0V and 5V?	YES	Replace PWB-A.
		NO	Replace UN2.

* C0FE1 to C0FFF

Step	Check Item	Result	Action
1	Is the jumper connector fitted properly across J1 and J2 on UN2?	NO	Change the position of the jumper connector.
2	Is each Original Size Detecting Sensor installed at the correct position?	NO	Install then correctly.
3	Does the malfunction code reappear after the corresponding Original Size Detecting Sensor has been replaced?	YES	Replace UN2 or PWB-A.

Metric Areas

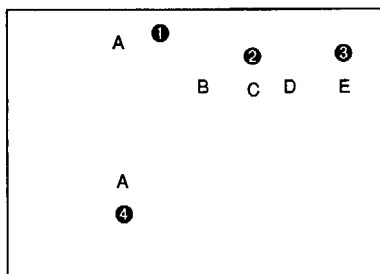
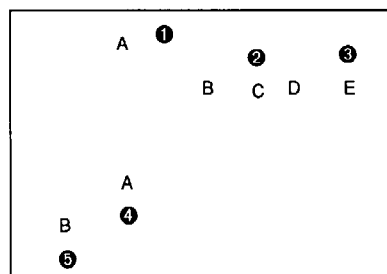
- ①: PC116, ②: PC117, ③: PC118 (option), ④: PC115, ⑤: PC119 (option)

* PC118 and PC119 are standard for Hong Kong area.

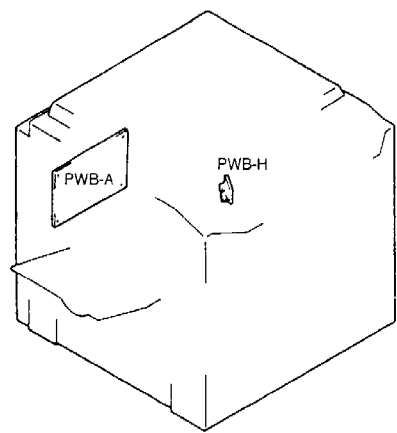
Inch Areas

- ①: PC116 (option), ②: PC117, ③: PC118 (option), ④: PC115

A to E: Sensor Positions

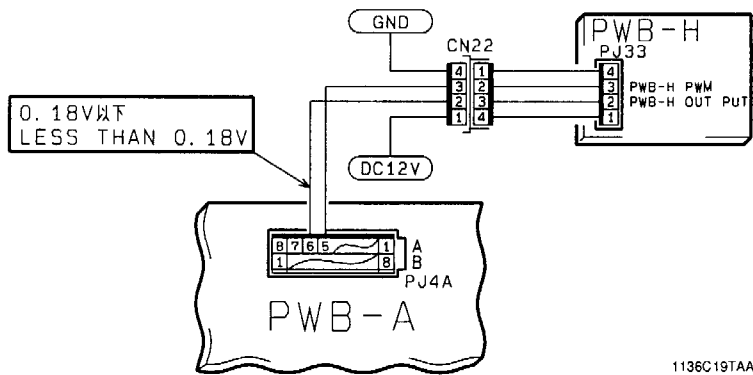


2-17. C0F10: AE Sensor Board PWB-H Malfunction



Symbol	Name
PWB-H	AE Sensor Board
PWB-A	Master Board

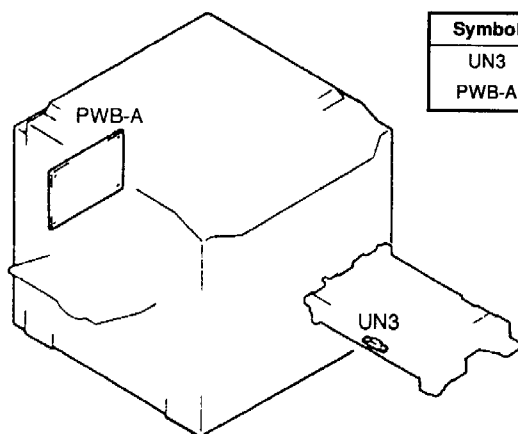
1136T023AA



1136C19TAA

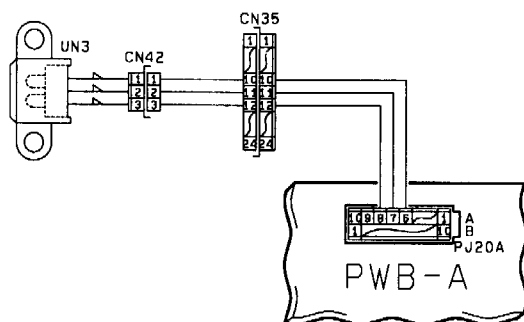
Step	Check Item	Result	Action
1	Is the voltage across PJ4AA-6 on PWB-A and GND 0.18 V or less when the Scanner is at its home position, LA1 OFF, and the Original Cover closed?	YES	Check the photo receiver of PWB-H for contamination or replace PWB-H.
		NO	Replace PWB-A.

- 2-18. C0F20: AIDC Sensor UN3 Variation Correction Failure
 C0F21: AIDC Sensor UN3 Contamination Correction Failure
 C0F22: AIDC Sensor UN3 V_G Correction Failure
 C0F23: AIDC Sensor UN3 Exposure Correction Failure



Symbol	Name
UN3	AIDC Sensor
PWB-A	Master Board

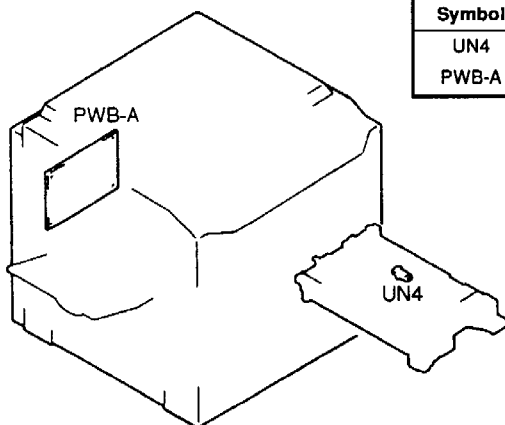
1136T024AA



1136C20TAA

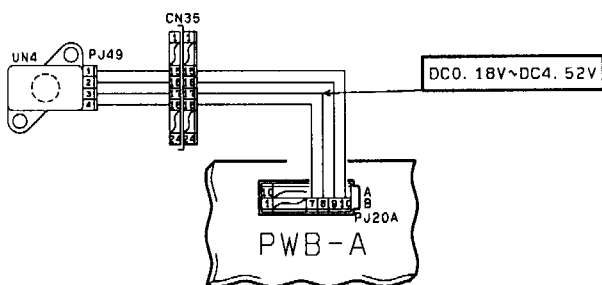
Step	Check Item	Result	Action
1	Is PJ20AA plugged securely into PWB-A?	NO	Plug it in securely.
2	Is CN35 connected securely?	NO	Connect it securely.
3	Is UN3 installed at the correct position?	NO	Install it at the correct position.
4	Is the photo receiver or LED of UN3 dirty?	YES	Clean UN3.
		NO	Replace UN3 or PWB-A.

2-19. C0F30: ATDC Sensor UN4 Failure
C0F31: ATDC Sensor UN4 Failure



Symbol	Name
UN4	ATDC Sensor
PWB-A	Master Board

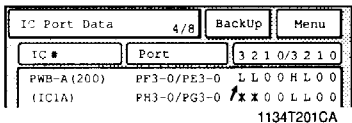
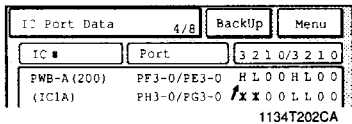
1136T025AA



1136C21TAA

Step	Check Item	Result	Action
1	Is the value for "Set" of "ATDC Level" of "Level History" equal to the value given on the Adjust Label?	NO	Enter the value given on the Adjust Label.
2	Is PJ20AB plugged securely into PWB-A?	NO	Plug it in securely.
3	Is CN35 connected securely?	NO	Connect it securely.
4	Is UN4 installed at the correct position?	NO	Install it at the correct position.
5	Is the voltage across PJ20AB-8 on PWB-A and GND in the range between DC0.18V and 4.52V while M1 is turning?	YES	Replace PWB-A.
		NO	Replace UN4.

Step	Check Item	Result	Action
1	Slide out the 3rd Drawer and check the 3rd Drawer Paper Lift-Up Sensor PC19 as described below (see T-3):		
	1) Make sure that the port is PG3 on PWB-A (200) (IC1A). 2) Select "I/O Port Data".		
	3) Is the data of PG3 on PWB-A (200) (IC1A) "L"? <div> </div>	NO	Check the Pressure Release mechanism of the Paper Take-Up Roll.
	4) Press down the Paper Take-Up Roll Pressure Release Lever to unblock PC19.		
	5) Select "I/O Port Data" again. Has the data of PG3 on PWB-A (200) (IC1A) changed from "L" to "H"? <div> </div>	YES	Change PF-202 PWB-A or EP3050/EP4050 PWB-A.
		NO	Change PC19.

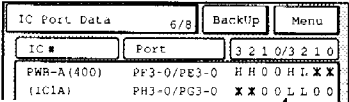
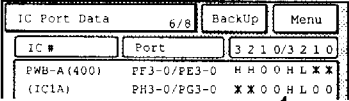
Step	Check Item	Result	Action
1	Slide out the 4th Drawer and check the 4th Drawer Paper Lift-Up Sensor PC23 as described below (see T-3):		
	1) Make sure that the port is PF3 on PWB-A (200) (IC1A).		
	2) Select "I/O Port Data".		
	3) Is the data of PF3 on PWB-A (200) (IC1A) "L"?		
	 <p>IC Port Data 4/8 BackUp Menu</p> <p>IC # Port 3 2 1 0/3 2 1 0</p> <p>PWB-A (200) PF3-0/PE3-0 L L 0 0 H L 0 0</p> <p>(IC1A) PH3-0/PG3-0 /x x 0 0 L L 0 0</p> <p>1134T201CA</p>	NO	Check the Pressure Release mechanism of the Paper Take-Up Roll.
	4) Press down the Paper Take-Up Roll Pressure Release Lever to unblock PC23.		
	5) Select "I/O Port Data" again. Has the data of PF3 on PWB-A (200) (IC1A) changed from "L" to "H"?	YES	Change PF-202 PWB-A or EP3050/EP4050 PWB-A.
	 <p>IC Port Data 4/8 BackUp Menu</p> <p>IC # Port 3 2 1 0/3 2 1 0</p> <p>PWB-A (200) PF3-0/PE3-0 H L 0 0 H L 0 0</p> <p>(IC1A) PH3-0/PG3-0 /x x 0 0 L L 0 0</p> <p>1134T202CA</p>	NO	Change PC23.

*C0904

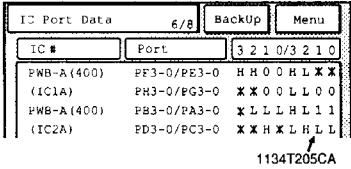
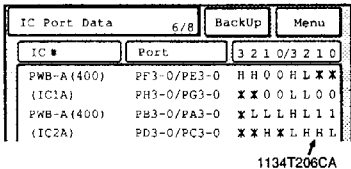
Step	Check Item	Result	Action
1	Slide out the 3rd Drawer and slide it back in. Does the 3rd Drawer Paper Lift-Up Motor M24 rotate?	YES	To Step 3.
2	When the 3rd Drawer is slid in, does the voltage across PJ11A-3 on PF- 202 PWB-A and GND change from DC0V to DC24V?	YES	Change M24.
		NO	Change PF-202 PWB-A or EP3050/EP4050 PWB-A.
3	While M24 is rotating, does the voltage across PJ9AB-5 on PF-202 PWB-A and GND change in the range DC0V to DC5V?	YES	Change PF-202 PWB-A or EP3050/EP4050 PWB-A.
		NO	Check the inside of the Lift-Up Motor Assy.

*C0954

Step	Check Item	Result	Action
1	Slide out the 4th Drawer and slide it back in. Does the 4th Drawer Paper Lift-Up Motor M25 rotate?	YES	To Step 3.
2	When the 4th Drawer is slid in, does the voltage across PJ11A-1 on PF- 202 PWB-A and GND change from DC0V to DC24V?	YES	Change M25.
		NO	Change PF-202 PWB-A or EP3050/EP4050 PWB-A.
3	While M25 is rotating, does the voltage across PJ10A-9 on PF-202 PWB-A and GND change in the range DC0V to DC5V?	YES	Change PF-202 PWB-A or EP3050/EP4050 PWB-A.
		NO	Check the inside of the Lift-Up Motor Assy. Change PC28.

Step	Check Item	Result	Action
1	Slide out the 3rd Drawer and check the 3rd Drawer Paper Lift-Up Sensor PC19 as described below (see T-3):		
	1) Make sure that the port is PG3 on PWB-A (400) (IC1A).		
	2) Select "I/O Port Data".		
	3) Is the data of PG3 on PWB-A (400) (IC1A) "L"?		
	 <p>1134T203CA</p>	NO	Check the Pressure Release mechanism of the Paper Take-Up Roll.
	4) Press down the Paper Take-Up Roll Pressure Release Lever to unblock PC19.		
	5) Select "I/O Port Data" again. Has the data of PG3 on PWB-A (400) (IC1A) changed from "L" to "H"?	YES	Change PF-102 PWB-A or EP3050/EP4050 PWB-A.
	 <p>1134T204CA</p>	NO	Change PC19.

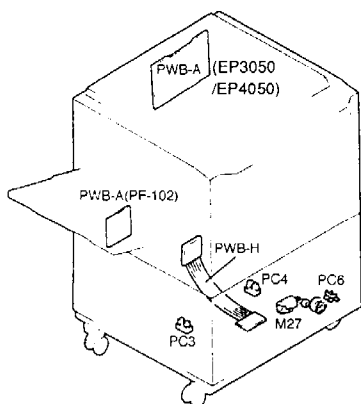
*C0992, C0993

Step	Check Item	Result	Action
1	Slide out the 3rd Drawer and check the Main Tray Lower Position Sensor PC2 as described below (see T-3): 1) Make sure that the port is PC1 on PWB-A (400) (IC2A). 2) Select "I/O Port Data". ----- 3) Is the data of PC1 on PWB-A (400) (IC2A) "L"? 	NO	Check that the Main Tray is in the lowermost position.
	4) With the 3rd Drawer slid out, lift up the Main Tray to unblock PC2. ----- 5) Select "I/O Port Data" again. Has the data of PC1 on PWB-A (400) (IC2A) changed from "L" to "H"? 	YES	Change PF-102 PWB-A or EP3050/EP4050 PWB-A.
		NO	Change PC2, PWB-H or flat cable.

*C0994

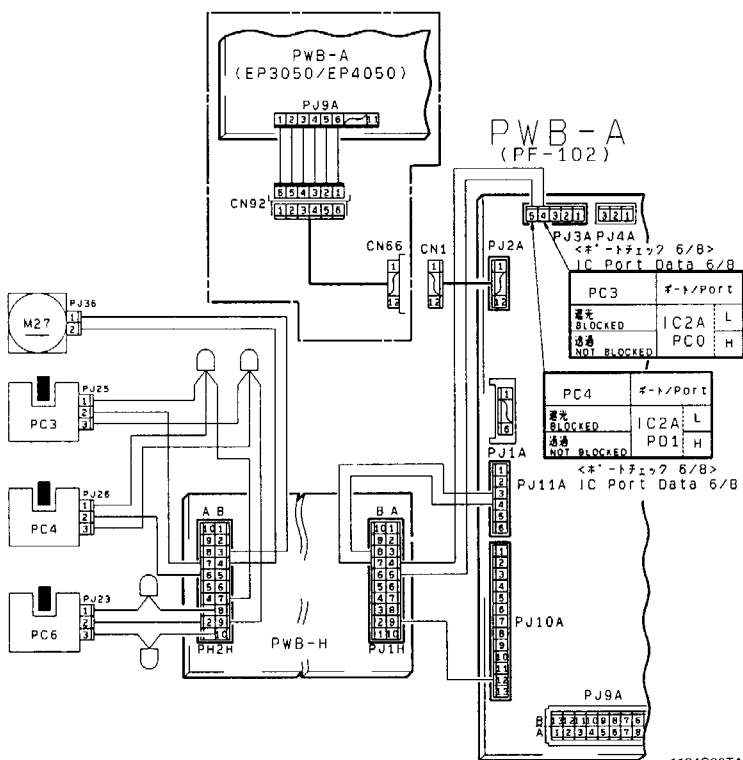
Step	Check Item	Result	Action
1	Does the Elevator Motor M26 rotate when the Drawer Release Key is pressed? (Does the Main Tray descend?)	YES	To Step 3.
2	When the Drawer is slid in or the Drawer Release Key is pressed, does the voltage across PJ11A-1 (descent)/-2 (ascent) on PF-102 PWB-A and GND change from DC0V to DC24V?	YES	Change M26. Check PWB-H and flat cable.
		NO	Change PF-102 PWB-A or EP3050/EP4050 PWB-A.
3	While M26 is rotating, does the voltage across PJ10A-5 on PF-102 PWB-A and GND change in the range DC0V to DC5V?	YES	Change PF-102 PWB-A or EP3050/EP4050 PWB-A.
		NO	Check the Pulse Discs, Gears, etc. Change PC5.

- 2-22. C0998: Shifter Transfer Failure
 C0999: Shifter Return Failure
 C099A: Shifter Return Failure
 C099b: Shifter Transfer Failure
 C099c: Shift Motor M27's Failure to Turn

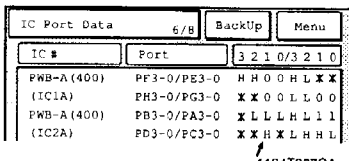
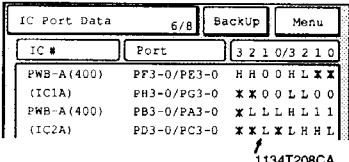


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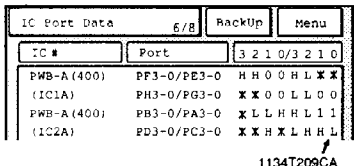
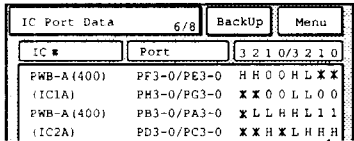
Symbol	Name
PC3	Shifter Home Position Sensor
PC4	Shifter Return Position Sensor
PC6	Shift Motor Pulse Sensor
M27	Shift Motor
PWB-H	Cabinet Transport Board
PWB-A	PF-102 Control Board
PWB-A	EP3050/EP4050 Master Board



1134C30TAA

Step	Check Item	Result	Action
1	Slide out the 3rd Drawer and check the Shifter Return Position Sensor PC4 as described below (see T-3):		
	1) Make sure that the port is PD1 on PWB-A (400) (IC2A).		
	2) Select "I/O Port Data".		
	3) Is the data of PD1 on PWB-A (400) (IC2A) "H"?		
	 <p>1134T207CA</p>	NO	Check the position of the Shift Tray.
	4) With the 3rd Drawer slid out, lift up the Main Tray to unblock PC4.		
	5) Select "I/O Port Data" again. Has the data of PD1 on PWB-A (400) (IC2A) changed from "H" to "L"?	YES	Change PF-102 PWB-A or EP3050/EP4050 PWB-A.
	 <p>1134T208CA</p>	NO	Change PC4, PWB-H or flat cable.

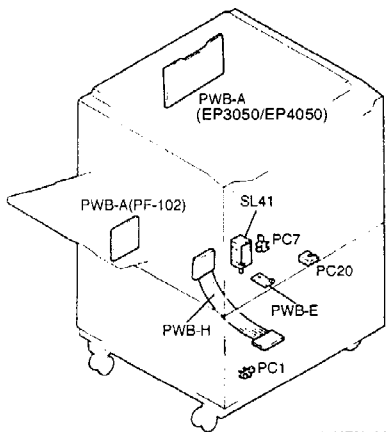
*C099A, C099b

Step	Check Item	Result	Action
1	Slide out the 3rd Drawer and check the Shifter Home Position Sensor PC3 as described below (see T-3): 1) Make sure that the port is PC0 on PWB-A (400) (IC2A). 2) Select "I/O Port Data".		
	3) Is the data of PC0 on PWB-A (400) (IC2A) "L"?	NO	Check the position of the Shift Tray.
			
	4) Remove the Shift Tray and Blocking Plate to unblock PC3.		
	5) Select "I/O Port Data" again. Has the data of PC0 on PWB-A (400) (IC2A) changed from "L" to "H"?	YES	Change PF-102 PWB-A or EP3050/EP4050 PWB-A.
		NO	Change PC3, PWB-H or flat cable.

*C099c

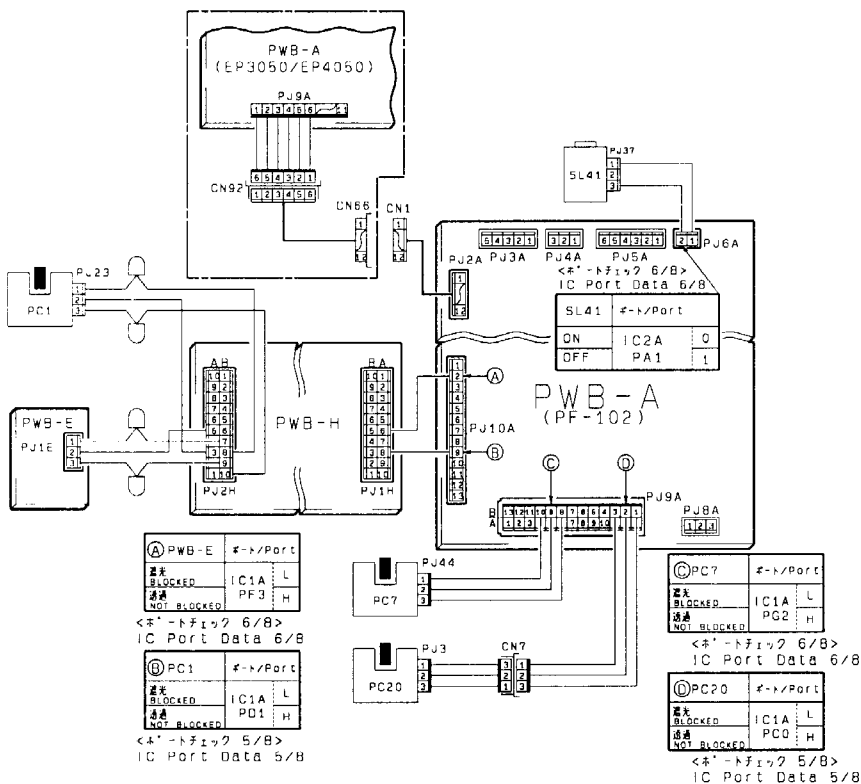
Step	Check Item	Result	Action
1	After loading a paper stack in the Shift Tray, slide the 3rd Drawer into position. Does the Shift Motor M27 rotate? (Is the paper stack transferred to the Main Tray?)	YES	To Step 3.
2	In Step 1, does the voltage across PJ11A-3 (rightward motion) on PF-102 PWB-A and GND change from DC0V to DC24V?	YES	Change M27. Check PWB-H and flat cable.
		NO	Change PF-102 PWB-A or EP3050/EP4050 PWB-A.
3	While M27 is rotating, does the voltage across PJ10A-12 on PF-102 PWB-A and GND change in the range DC0V to DC5V?	YES	Change PF-102 PWB-A or EP3050/EP4050 PWB-A.
		NO	Check the Pulse Discs, Gears, Belt, etc. Change PC5.

2-23. C0996: 3rd Drawer Lock Release Failure
C0F79: Paper Empty Sensor Failure

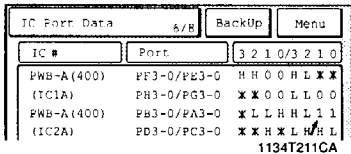
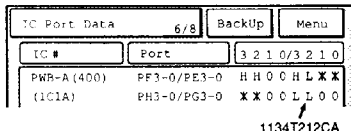
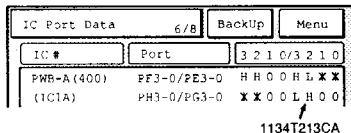


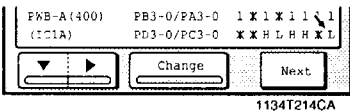
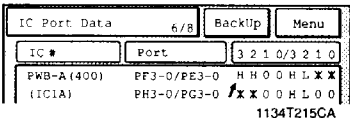
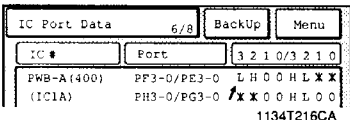
1136T031AA

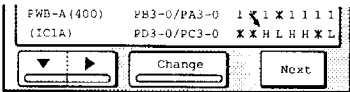
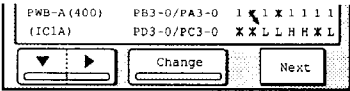
Symbol	Name
PC1	Shift Tray Paper Empty Sensor
PC7	3rd Drawer Set Sensor
PC20	3rd Drawer Paper Empty Sensor
SL41	3rd Drawer Lock Solenoid
PWB-E	Main Tray Paper Empty Board
PWB-H	Cabinet Transport Board
PWB-A	PF-102 Control Board
PWB-A	EP3050/EP4050 Master Board



1134C31TAA

Step	Check Item	Result	Action
1	Check the operation of the 3rd Drawer Lock Solenoid SL41 as described below (see T-4):		
	1) Make sure that the port is PA1 on PWB-A (400) (IC2A).		
	2) Select "I/O Port Data"		
	3) Is the data of PA1 on PWB-A (400) (IC2A) "1" (SL41: deenergized)?	NO	Change PF-102 PWB-A or EP3050/EP4050 PWB-A.
	 <p>IC Port Data 6/8 BackUp Menu</p> <p>IC # Port 3 2 1 0/3 2 1 0</p> <p>PWB-A (400) PF3-0/PE3-0 H H 0 0 H L X X</p> <p>(IC1A) PH3-0/PG3-0 X X 0 0 L L 0 0</p> <p>PWB-A (400) PB3-0/PA3-0 X L L H H L 1 1</p> <p>(IC2A) PD3-0/PC3-0 X X H X L H H L</p> <p>1134T211CA</p>		
	4) By pressing the "Change" key to change the data from "1" to "0", does SL41 operate? (Make sure that SL41 makes a sound.)	YES	Check the Drawer Lock mechanism.
		NO	Change SL41.
2	Do as described below to check the 3rd Drawer Paper Set Sensor PC7 when the 3rd Drawer is slid in (see T-3):		
	1) Make sure that the port is PG2 on PWB-A (400) (IC1A).		
	2) Select "I/O Port Data".		
	3) Is the data of PG2 on PWB-A (400) (IC1A) "L"?	NO	Check the 3rd Drawer Set Detecting Plate.
	 <p>IC Port Data 6/8 BackUp Menu</p> <p>IC # Port 3 2 1 0/3 2 1 0</p> <p>PWB-A (400) PF3-0/PE3-0 H H 0 0 H L X X</p> <p>(IC1A) PH3-0/PG3-0 X X 0 0 L L 0 0</p> <p>1134T212CA</p>		
	4) Remove the rear right door and forcibly unlock the 3rd Drawer with a screwdriver to push it out. (PC7: not blocked)		
	5) Select "I/O Port Data" again. Has the data of PG2 on PWB-A (400) (IC1A) changed from "L" to "H"?	YES	Change PF-102 PWB-A or EP3050/EP4050 PWB-A.
	 <p>IC Port Data 6/8 BackUp Menu</p> <p>IC # Port 3 2 1 0/3 2 1 0</p> <p>PWB-A (400) PF3-0/PE3-0 H H 0 0 H L X X</p> <p>(IC1A) PH3-0/PG3-0 X X 0 0 L H 0 0</p> <p>1134T213CA</p>		
		NO	Change PC7.

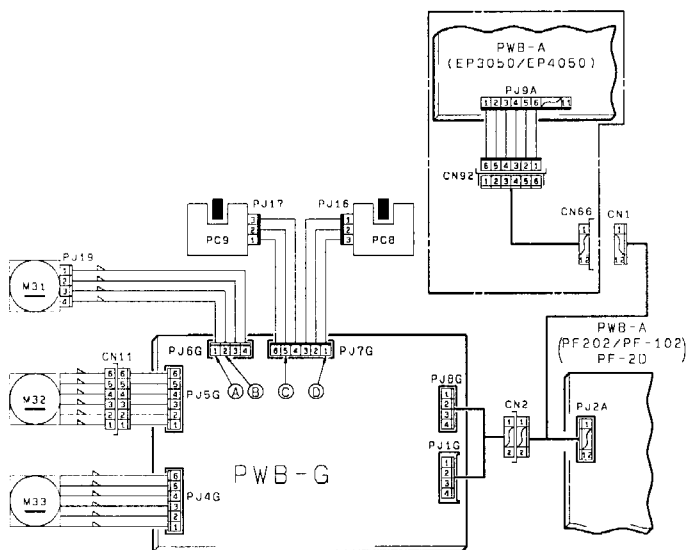
Step	Check Item	Result	Action
1	Does this failure occur when the Main Tray has completed upward motion?	YES	To Step 3.
2	Does this failure occur when the Main Tray has completed downward motion or on completion of paper transfer from the Shift Tray to the Main Tray?	YES	To Steps 4, 5.
3	With the paper stack lifting up the Actuator, check the 3rd Drawer Paper Empty Sensor PC20 as described below (see T-3): 1) Make sure that the port is PC0 on PWB-A (400) (IC1A). 2) Select "I/O Port Data".		
	3) Is the data of PC0 on PWB-A (400) (IC1A) "L"? 	YES	Change PF-102 PWB-A or EP3050/EP4050 PWB-A.
		NO	Change PC20.
4	Slide out the 3rd Drawer and do as described below to check that no paper exists on the Main Tray Paper Empty Board PWB-E (see T-3): 1) Make sure that the port is PF3 on PWB-A (400) (IC1A). 2) Select "I/O Port Data".		
	3) Is the data of PF3 on PWB-A (400) (IC1A) "H"? 	NO	Change PWB-E, PWB-H or flat cable.
	4) Using a sheet of paper, block PWB-E.		
	5) Select "I/O Port Data" again. Has the data of PF3 on PWB-A (400) (IC1A) changed from "H" to "L"? 	YES	Change PF-102 PWB-A or EP3050/EP4050 PWB-A.
		NO	Change PWB-E, PWB-H or flat cable.

Step	Check Item	Result	Action
5	Do as described below to check the Shift Tray Paper Empty Sensor PC1 with no paper on the Shift Tray (see T-3): 1) Make sure that the port is PD1 on PWB-A (400) (IC1A). 2) Select "I/O Port Data".		
	3) Is the data of PD1 on PWB-A (400) (IC1A) "H"?  1134T217CA	NO	Change PC1, PWB-H or flat cable.
	4) Using a sheet of paper, block PC1.		
	5) Select "I/O Port Data" again. Has the data of PD1 on PWB-A (400) (IC1A) changed from "H" to "L"?  1134T218CA	YES	Change PF-102 PWB-A or EP3050/EP4050 PWB-A.
		NO	Change PC1, PWB-H or flat cable.

C0d51: Duplex Unit Drive Motor M31 Turning at Abnormal Timing



Symbol	Name
PC8	Duplex Gate Home Position Sensor
PC9	Front/Rear Edge Guide Plate Home Position Sensor
M31	Duplex Unit Drive Motor
M32	Gate Motor
M33	Front/Rear Edge Guide Drive Motor
PWB-G	Duplex Unit Control Board
PWB-A	PF-202, PF-102 Control Board
PWB-A	EP3050/EP4050 Master Board



Ⓐ M31 LOCK	r-h/Port	
回転 ROTATION	1C1G	L
停止 LOCK	PE1	H

<ホートチェック 7/8>
IC Port Data 7/8

© PC9	4-1/Port	
未 BLOCKED	IC1G	L
通 NOT BLOCKED	PC3	H

<* - トチエツ 6/8>
IC Port Data 6/8

Ⓢ M31 REM	* - b/Port	
ON	IC1G	0
OFF	PB3	1

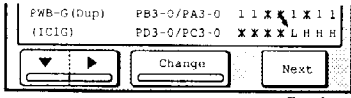
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IC Port Data 6/8

④ PCB	4-Port	
通光 BLOCKED	IC1G	L
通光 NOT BLOCKED	PEO	H

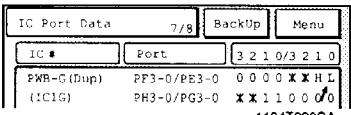
<本 - トチエツ 7/8>
IC Port Data 7/8

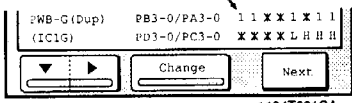
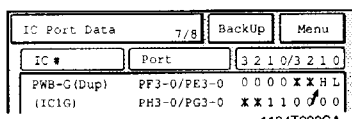
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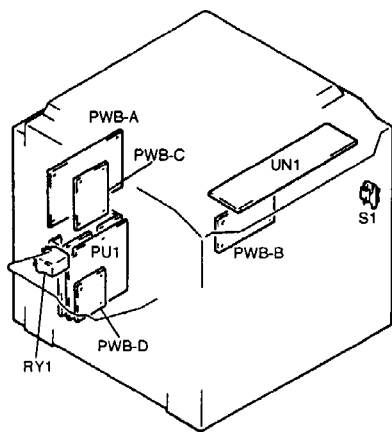
Step	Check Item	Result	Action
1	Slide out the Duplex Unit, move the Front/Rear Edge Guide Plates to other than their home positions, and slide the Duplex Unit back in. At this time, does the Front/Rear Edge Guide Drive Motor M33 rotate?	YES	Check for overload.
		NO	Change M33. Change PWB-G, PF-202, PF-102 PWB-A, or EP3050/EP4050 PWB-A.
2	Check the Front/Rear Edge Guide Plate Home Position Sensor PC9 as described below (see T-3): 1) Block PC9. (The Front/Rear Edge Guide Plates are at their home positions.) 2) Make sure that the port is PC3 on PWB-G (Dup) (IC1G). 3) Select "I/O Port Data"		
	4) Is the data of PC3 on PWB-G (Dup) (IC1G) "L"?	YES	Change PWB-G, PF-202, PF-102 PWB-A, or EP3050/EP4050 PWB-A.
		NO	Change PC9.

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Step	Check Item	Result	Action
1	While turning the Screw Cam, move the Trailing Gate Unit to unblock the Duplex Gate Home Position Sensor PC8. When the Duplex Unit is slid into position in this state, does the Gate Motor M32 rotate?	YES	Check for overload.
		NO	<ul style="list-style-type: none"> Change PWB-G, PF-202, PF-102 PWB-A, or EP3050/EP4050 PWB-A. Change M32.
2	Check PC8 as described below (see T-3): 1) Block PC8. (The Trailing Gate Unit is at its home position.) 2) Make sure that the port is PE0 on PWB-G (Dup) (IC1G). 3) Select "I/O Port Data".		
	4) Is the data of PE0 on PWB-G (Dup) (IC1G) "L"?	YES	Change PWB-G, PF-202, PF-102 PWB-A, or EP3050/EP4050 PWB-A.
		NO	Change PC8.

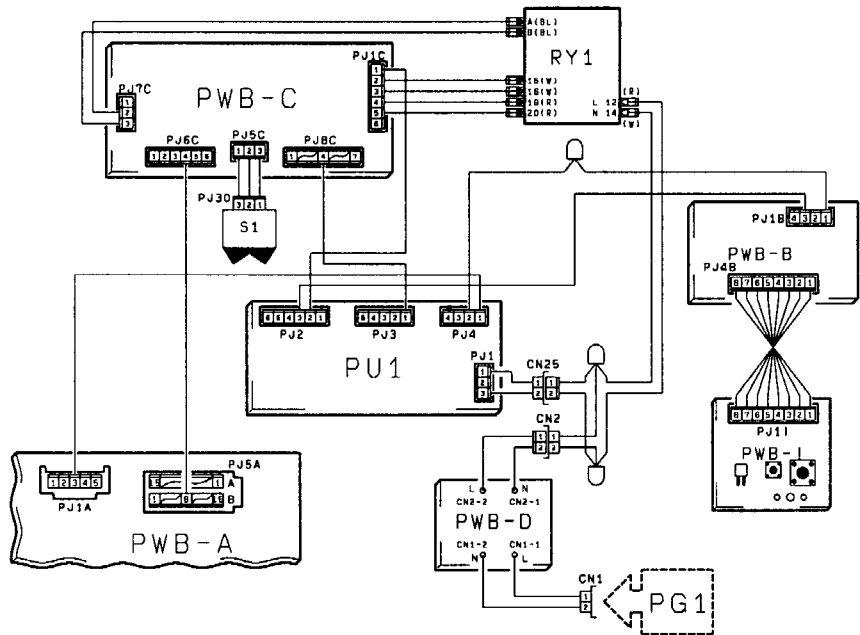
Step	Check Item	Result	Action
1	Check the Duplex Unit Drive Motor M31 as described below (see T-4):		
	1) Make sure that the port is PB3 on PWB-G (Dup) (IC1G). 2) Select "I/O Port Data".		
	3) Is the data of PB3 on PWB-G (Dup) (IC1G) "1"? 	NO	Change PWB-G, PF-202, PF-102 PWB-A, or EP3050/EP4050 PWB-A.
	4) By pressing the "Change" key to change the data from "1" to "0", does M31 rotate?	YES	Check the rollers, gears, etc. for overload.
2	Do as described below to check the input signal (Duplex Unit Drive Motor Lock signal) when M31 is at a stop (see T-4):		
	1) Make sure that the port is PE1 on PWB-G (Dup) (IC1G). 2) Select "I/O Port Data".		
	3) Is the data of PE1 on PWB-G (Dup) (IC1G) "H"? 	YES	Change PWB-G, PF-202, PF-102 PWB-A, or EP3050/EP4050 PWB-A.
		NO	Change M31.

3. Power is not Turned ON



Symbol	Name
S1	Power Switch
RY1	Main Relay
UN1	Control Panel
PWB-B	MSC Board
PWB-A	Master Board
PWB-C	Power Supply Board
PWB-D	Noise Filter Board
PU1	DC Power Supply Unit

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Symptom	Step	Check Item	Result	Action
• RY1 is not turned ON.	1	Is the source voltage being supplied to the circuit across PJ-1 and 3 of PU1?	NO	Check the main fuse and supply power. If they check okay, replace PWB-D.
	2	Is the voltage across PJ2-2 on PU1 and GND DC24V?	NO	Check the fuse on PU1 and, if it checks okay, replace PU1.
	3	Is the voltage across PJ5C-2 on PWB-C and GND 24V when S1 is OFF?	NO	Replace PWB-C.
	4	Are the voltages across PJ5C-1 on PWB-C and GND, and across PJ5C-3 on PWB-C and GND, DC24V when S1 is ON?	NO	Check S1.
	5	Is the voltage across PJ8C-4 on PWB-C and GND DC24V when S1 is ON?	NO	Replace PWB-C.
	6	Is the voltage across PJ4-1 on PU1 and GND DC5V when S1 is ON?	NO	Replace PU1.
	7	Does the voltage across PJ5AB-8 on PWB-A and GND instantaneously go from HIGH to LOW when S1 is turned ON?	NO	Replace PWB-A.
	8	Are the voltages across PJ1C-3 on PWB-C and GND, and across PJ1C-5 on PWB-C and GND, DC24V when S1 is ON?	NO	Check RY1.
• No control panel Indicators light up, though RY1 is turned ON.	1	Is the voltage across PJ4-2 on PU1 and GND DC5V?	NO	Replace PU1.
	2	Is the voltage across PJ2-3 on PU1 and GND DC24V?	NO	Replace PU1.
	3	Are all PJs on PWB-B plugged securely into position?	NO	Plug them in securely.
	4	Is PJ11 plugged securely into PWB-I?	NO	Plug it in securely.
	5	Is PJ5A plugged securely into PWB-A?	NO	Plug it in securely.
			YES	Replace PWB-A, PWB-B, UN1, or PWB-I.